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# Textile World

JULY, 1956

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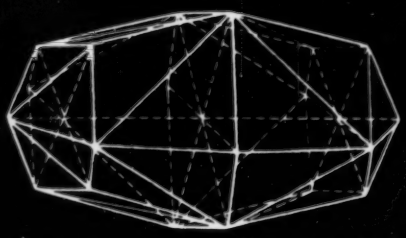
RESEARCH RE-DESIGNS!



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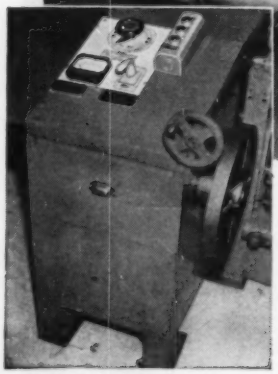

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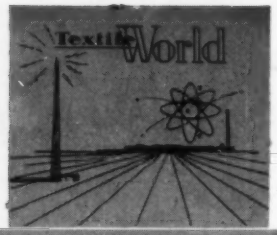


# Developments To Watch

**BULKED ACETATE**...in solution-dyed and natural forms will be made available soon by Celanese Corp. Fabrics made from these yarns have a texture suitable for dry, crisp, and worsted effects.

**ETHYLENE'S COUSIN, PROPYLENE**...looks like a comer in plastics, fibers, films, and molded products. Cheaper than ethylene, propylene can now be catalyzed to form the larger molecules of polypropylene by processes developed in Italy at the Milan Polytechnical Institute. The new method worked out by Prof. Guido Natta is said to have overcome some of the faults of polypropylene made by earlier processes.

**WORSTED JERSEY**...in dots, checks, tweeds, heathers, and stripes will be strong this fall. Many garments will be coordinates of plain and fancy jersey and have horizontal stripes that mix and match. Color leaders will be brown, green, blue, red, gold, and black.

**THE ALL-OUT UNION DRIVE**...in the South has petered out again. Reason: Southern opposition to racially integrated unions.

**SOLUTION-DYED NYLON**...now here, will solve many of the problems associated with colored nylon tricot fabrics. Black will be one of the first colors in production.

**PAPER GARMENTS**...may be just around the corner, according to C. W. Kohlman, American Cyanamid Co. He says that paper fabrics can be easily printed, painted, or silk-screen processed for party dresses, rain capes, jackets, and sport shirts. Other applications might be utility garments, bathing suits, socks, sleeping bags, and boat sails. The garments would be worn until soiled and thrown away.

**SURVIVAL OF U. S. TEXTILES**...may hinge directly upon greatly expanding present markets and improving creative contributions of all employees, says Morris M. Bryan, Jr., former president of the Cotton Manufacturers Association of Georgia.

**AIR FORCE OVERCOATS**...will continue to be made of all-wool velour because of processing difficulties encountered with blends of synthetics. Tests show that problems arising at the fulling process make it hard to secure the desired color and finish.

**COTTON IS GAINING**...significant strength in the California apparel industry, says the National Cotton Council. Manufacturers surveyed by the council report that cotton's share of the total fiber consumption has increased 25% since 1947. The California apparel industry comprises more than 1,700 establishments, with annual sales of $600-million.

**MEN'S SUITING SALES**...could be increased substantially if the industry would promote double-breasted suits, says Frank C. Howell, vice-president, Commercial Factors Corp. Double-breasted suits require about ⅛ yd. more material, and many men would buy additional suits to be in style.

**DESIGN PIRATES**...will continue to pester legitimate firms until court decisions establish as illegal the practice of copying designs. One case recently was settled and dismissed without trial, and two other cases had not been heard at this writing. Converters who have had experience with design thieves are continuing to register their designs with the National Federation of Textiles Design Registration Bureau in an effort to prevent copying. Over 2,500 designs have been cleared so far.

**COTTON-AND-SYNTHETIC BLENDS**...will replace cotton in WAC summer uniforms by 1957, says Col. Irene Gallaway, WAC director. Reason: looks neater and is easier to wash and iron than all-cotton fabrics.

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# ANNOUNCING THE NEW TURBO AD-96

**Combination Preboarder and Finish Boarder**

The new Turbo machine carries all the newest four cycle features, timed pre-heating and pre-conditioning of boards, timed solenoid controlled air expulsion, timed temperature controlled steaming cycle, timed air drying cycle, plus increased economies in steam consumption and shorter processing and drying time.

The AD-96 is a two operator machine with a double row of forms mounted on the collapsible conveyors, and if used on the one-boarding operation principle the AD-96 really replaces four machines (two preboarders and two finish boarders).

The AD-96 used for preboarding or finish boarding, separately, doubles the production of previous models, yet sacrifices none of the famous Turbo quality.

Built on the "Gentle as a Lamb" principle for quality, this new equipment offers quantity preboarding and finish boarding where floor space is at a premium.

Full details are yours for the asking — get in touch with Turbo today.

**Double Production per Machine**

**96 Forms per Machine**

**48 Stockings in the Cabinet per Processing Cycle**

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SINCE 1929

**TURBO MACHINE COMPANY, LANSDALE, PENNA., U.S.A.**

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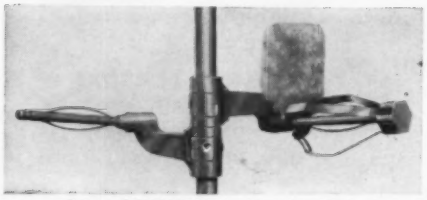
# McBRIDE CREEL CORNER

## FLEXIBILITY IN HANDLING PACKAGES

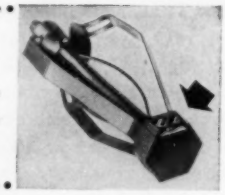
## VERSATILITY WITH WIDE RANGE OF PACKAGE STYLES



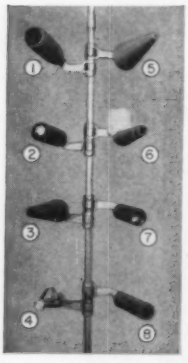
Patented McBride Swing Arm Assembly.

The Bowed Spring Spindle is tilted upward to a 5° angle to prevent packages from working loose. Arm swings out for package change, snaps back in running position into an indented, hardened steel collar by means of an internally contained ball type spring lock. Sheepskin pad (optional) mounted on swinging arm behind cone holder presses against back of cone (rayon, silk, nylon, etc.) and prevents yarn from dropping behind package.

Quik-Change Cone Holder

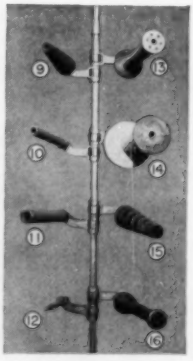


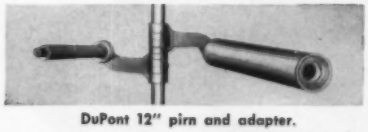
Quik-Change Cone Holder rotates to facilitate tying of transfer tails. Completely rustproof, of sturdy construction, it greatly reduces changeover time from cones to tubes — of vital importance in creels of large capacity. No set screws. Just press thumb release to remove. Snaps back on.



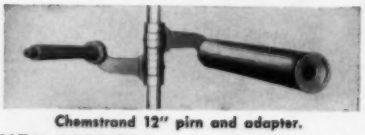

♦ QUIK-CHANGE CONE HOLDER mounted on Bowed Spring Spindle accommodates many packages including: 1. Large diameter metal dye tube; 2. Headless package; 3. Perforated cone; 4. Quik-Change Cone Holder; 5. Cotton cone; 6. Rayon cone; 7. Large diameter fiber dye tube; 8. Large diameter parallel shipping package.

BOWED SPRING SPINDLE ♦ with Quik-Change Cone Holder removed accommodates many packages including: 9. Wooden cone; 10. Fiber shipping tube; 11. 10" nylon pirn; 12. Bowed Spring Spindle; 13. Bakelite throwing bobbin for nylon; 14. Maple throwing bobbin for rayon; 15. Wooden cone for carpet yarns; 16. Woolen twister bobbin.



DuPont 12" pirn and adapter.



Chemstrand 12" pirn and adapter.

### FLEXIBILITY WITH NYLON

The Bowed Spring Spindle and Quik-Change Cone Holder will handle a wide variety of packages—few adapters are needed with McBride equipment but they are available to meet special problems.

Mills warping nylon often must change from DuPont pirn to Chemstrand pirn and back. This hard maple pirn holder will accommodate both, eliminating the time needed to mount a special adapter for either pirn.

**LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE.**

***CREELS for every purpose,* CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.**

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## DEVELOPMENTS TO WATCH

**NYLON - COATED RAINCOATS** . . . will be used by the Armed Services in 1957, according to the Quartermaster Corps. Made of 1.8-oz. fabric, the coats will have a life expectancy of three to four years.

**JAP "SIGN" LEGISLATION** . . . in South Carolina and Alabama will not be challenged by the U. S. Government, according to the State Department, unless legality of the legislation is tested in court action.

**BRITISH SEEK U. S. MARKETS** . . . by copying American textile designs. A group of large English mills have employed James Morris, design consultant, to study U. S. trends. He reports that American women prefer simple, open designs, while English women go for smaller and more-intricate patterns.

**WORLD-WIDE STANDARDS** . . . for the measurement of fineness of textile fibers may become a reality if the International Standards Organization adopts a Micronaire gauge manufactured by Sheffield Corp., Dayton, Ohio. The proposal was made by the American delegation at a recent council meeting of the organization.

**FABRIC LABELS** . . . will be used in Germany to indicate fiber content and characteristics. The new labels have arrows pointing to numbers denoting exact fiber content and colored circles indicating fabric characteristics.

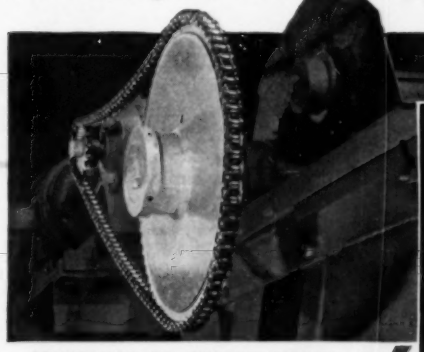
**MEXICAN TEXTILE MACHINERY** . . . looms and parts primarily, will soon be made in Mexico by Toyoda Co., of Japan. When this plant is in operation, chances are the Mexican government will put prohibitive tariffs on imports of similar machinery from the United States and other countries.

**NYLON TARPAULINS** . . . coated with neoprene are so light one man can handle a cover on a 28-ft. truck, even when the cover is wet. The fabric does not absorb grease and does not develop rust spots from contact with metal. Aldan Rubber Co. developed the process.

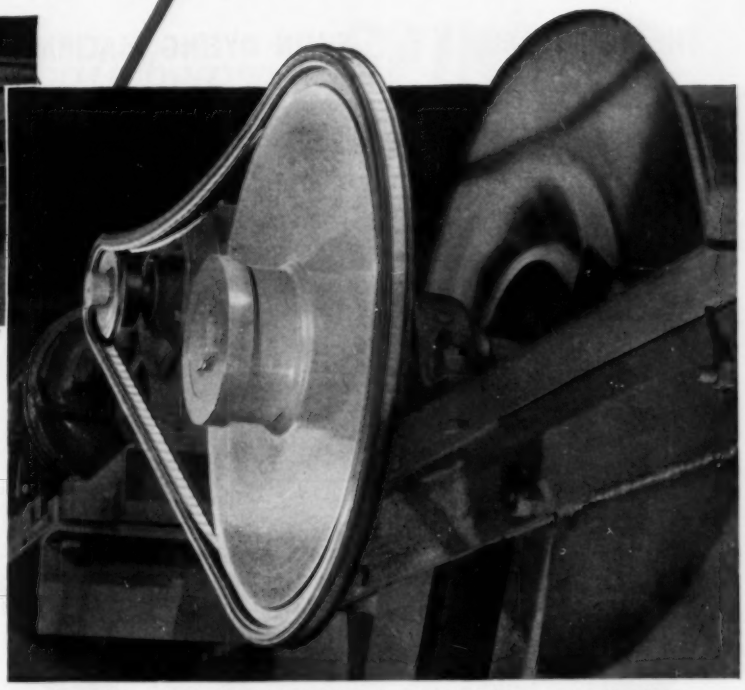


← For more data, write this page number on Reader-Service card.

## It's not just static strength...



**RESISTANCE TO TENSILE STRESS** is achieved by use of properly heat-treated, accurately-machined side bars made of premium steel and fitted with properly-hardened pins, bushings and rollers. But to resist *operational* stresses, additional controls over dimensional accuracy, uniformity and roller resiliency are essential.



**STRENGTH OF CHAIN IN MOTION** is accomplished through tensile strength *plus* special Link-Belt refinements. These include pitch-hole preparation, micro-finish of parts, special processing of sidebars, prelubrication and rigid quality control from initial selection of materials to final protective boxing.

# it's *dynamic strength*

## in LINK-BELT Roller Chain that fights fatigue

On high-speed drives or heavy conveying jobs, the components of every pitch of roller chain face severe and repeated operating stresses—engagement with sprockets, shock of starting loads, centrifugal loads and others. That's why *dynamic strength*—ability of chain to resist these stresses—is so important. And it's built into *every length* of Link-Belt Precision Steel Roller Chain.

How is dynamic strength developed? In addition to Link-Belt "extras" . . . special design, manufacturing and processing steps provide required properties of uniformity and accuracy for long-life operation.

Talk over your roller chain needs at your nearby Link-Belt office or authorized stock-carrying distributor. Ask for Book 2457, covering this complete line of single and multiple widths, in ¼ to 3-inch standard pitch, 1 to 3-inch double pitch.

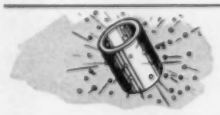
14.122

**LINK-BELT**

**ROLLER CHAINS & SPROCKETS**

**LINK-BELT gives you dynamic strength that comes from these important EXTRAS**

**PRE-STRESSING** of multiple width chain provides uniform load distribution.



**SHOT-PEENED ROLLERS** have greater fatigue life, added ability to withstand impact.

**CLOSER HEAT-TREAT CONTROL** —coupled with rigid testing insures uniformity.

**LOCK-TYPE BUSHINGS** (applied on a range of sizes) end a cause of stiff chain.

**LINK-BELT COMPANY:** Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.



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# MODERN DYEHOUSE EQUIPMENT

## THE DEPENDABLE KWG SKEIN DYEING MACHINE

*KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.*

**FOR QUALITY DYEING**
**WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS**

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved 'Ferris-Wheel' performance . . . give you the penetration and evenness of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY
ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.


## DEVELOPMENTS TO WATCH

THE BRAZILIAN MARKET . . . for textiles and textile machinery may be on the way out. Kanelo Ltd., a world-wide Japanese organization, plans to build a large textile mill in the state of Sao Paulo. Textile Machinery Makers Ltd., England, will establish a textile-machinery-manufacturing plant in the same state. Brazil already has a sizable textile industry.

## Letters From Readers

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinion appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.

### WHAT SUPERVISORS NEED TO BE SUCCESSFUL

Dear Editor:

I read the TEXTILE WORLD Forum, "What Superintendents Expect of Overseers," [TEXTILE WORLD, May, '56, p. 91] and enjoyed it.

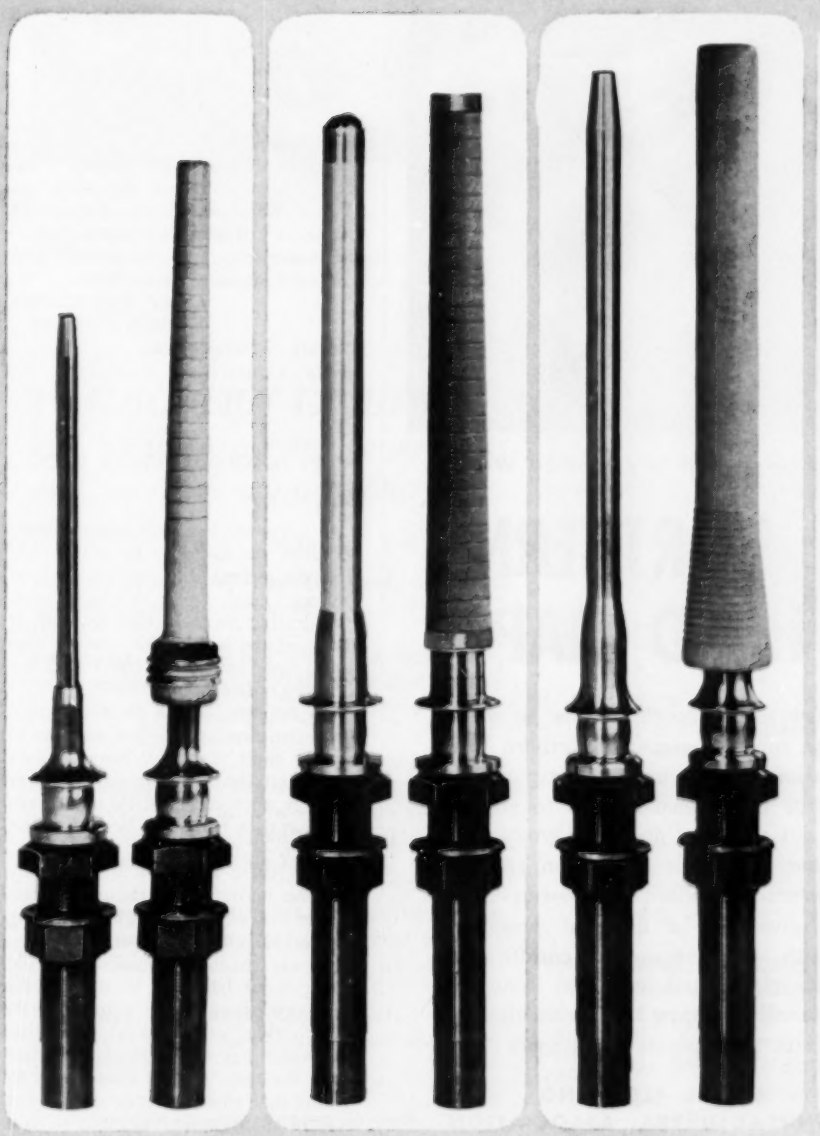
I consider your editorial, "Where Supervisors Fail," a splendid exposition of what the superintendents said. You picked out the essential thought and developed it in a very clear-cut, concise way.

ALLEN JONES
General Supt.
Muscogee Mfg. Co.
Columbus, Ga.

CONTINUED ON PAGE 10

# ROBERTS *ball bearing* SPINDLES

FOR SPINNING AND TWISTING



Based on many years of experience with anti-friction spindles, the best ideas of skilled people in the Mills were embodied into Roberts Ball Bearing Spindles to provide the most wanted features.

First was the elimination of oiling. Roberts Spindles need no attention except for two drops of oil every 3 to 5 years.

The capacity for high spindle speeds is most important — not only for today but for the ever increasing speed demands in the future. The use of precision ball bearings provides this reserve speed capacity.

More dependability, better accessibility and much easier plumbing is obtained by means of the all-steel base design, exclusive with Roberts.

Small whorl diameters mean reduced cylinder speeds and lower horsepower consumption, increased life of cylinders, bearings, tape tension pulleys and tape.

Using Roberts Spindles for current bobbin lengths and ring sizes still allows in most cases for the future increase of package sizes without changing spindles, at no extra cost.

Time is saved in installation by the hex base, the cupped base seat and washer, the extra fine tightening threads. Steel base and whorl prevent damage from tapping during plumbing.

The high smooth finish on all parts and elimination of the external doffer guard prevent lint catching.

All these outstanding features—plus many more—offer the greatest flexibility of use, the highest precision for long life, the assurance that Roberts Ball Bearing Spindles will serve the Mills' needs well into the future—and, at low initial cost.

Available in three Top Drive types: for filling quills, paper tubes, and wood warp bobbins.

**ROBERTS COMPANY**

SANFORD, NORTH CAROLINA



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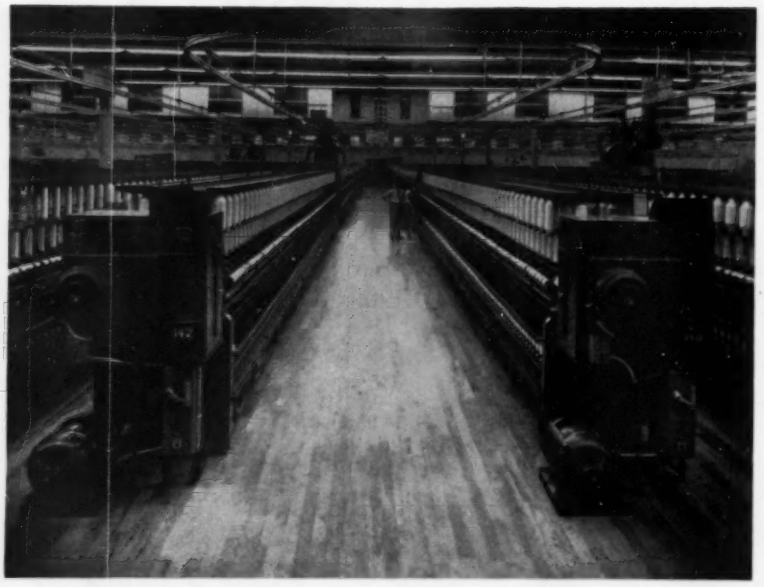
*Many an old-time weaver's hut had a dirt floor. We can be sure he'd have been a better weaver with a floor like this!*



**Prominent Southern mill—one of many floored with—**

foot-friendly

# NORTHERN HARD MAPLE

When your new maple flooring bears an **MFMA** mill-mark, you can be sure it's genuine Northern Hard Maple. **MFMA** regulations assure you each strip or block is true to species,* true to dimension, true to grading. So you *know* you've got *the finest floor that grows*. And, whether your floor is laid on grade or above grade, modern sub-floor specifications give you a floor of prodigious strength — vibration-free, comfortable, bright, clean and easy to maintain. **MFMA** will be happy to provide all available data to help you. Just write —

**WRITE!**
for newest listing of MFMA laboratory-tested and approved floor finishes.

**MAPLE FLOORING MANUFACTURERS ASSOCIATION**
Suite 592, Pure Oil Building, 35 E. Wacker Drive
Chicago 1, Illinois

*Acer Saccharum

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

## ROUND TABLE Continued

Dear Editor:

Congratulations on your fine editorial, "Where Supervisors Fail."

Being in a staff position and working with supervisors every day, I agree that a closed mind is the greatest drawback on the road to progress. . . . I'm sure that at times your editorial applies to all of us.

R. D. Scheirer, Jr.
Director Ind. Eng.
C. H. Masland & Sons
Carlisle, Pa.

Dear Editor:

I certainly read with interest Textile World's Forum discussion on "What Superintendents Expect of Overseers." It was most informative—and convincing . . . a real contribution to the literature of supervision.

Mort Friedlander
Editor & Publisher
Executives' Service, Inc.
Mystic, Conn.

### DON'T FORGET TO CHECK BACK

Dear Editor:

At every level of mill management, decisions are likely to be made only after discussions that include men of the next lower rank. While there is considerable merit in this method, it also contains a flaw that can be corrected only by a final check-back on the accumulated opinions.

For example, in the planning stage, a foreman may ask his best workers to express their ideas. Without much opportunity to think the problem over carefully, they can do little more than say what they believe to be true at the moment.

Later these men will undoubtedly give the matter more thought. Conditions may also change greatly during the period between the original questions and the final decisions. While management has kept in touch with developments and so maintains its own thinking on a current basis, this advantage may be overlooked farther down the line. It isn't always safe to assume that what someone on a lower level of management thought several weeks ago still stands as his present best judgment.

A final check-back at the sources of opinions may prevent decisions being based on ideas that have since been altered to some extent either by the passing of time or by more careful thought on the subject.

George M. Dodson
Harrisburg, Pa.



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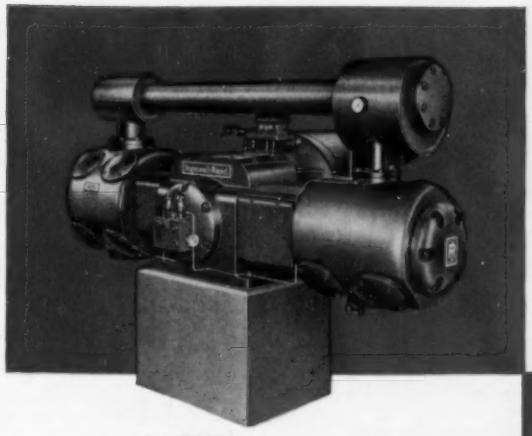
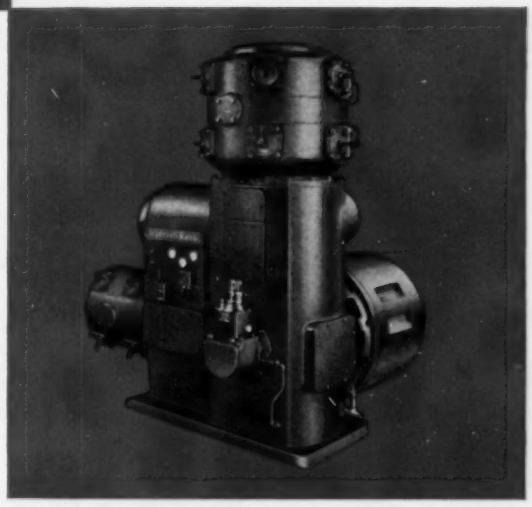
## TWO READY-TO-RUN COMPRESSORS FOR

# LOW-COST AIR POWER

## IN YOUR SHOP



**the PHE**
- 75 and 100 hp packaged
- Opposed-piston balanced design



**the XLE**
- 125 to 250 hp packaged
- 300 and 350 hp with engine-type synchronous motor
- Thru-frame air flow

*Why MODERN I-R DESIGN can reduce your air power costs and increase your production*

**Built tough for continuous full load,** and refined for efficient performance at all loads.

**Packaged, ready to run,** each unit completely self-contained with crankshaft-mounted motor. Units up to 250 hp are shipped fully assembled, ready to hook up.

**Full-floating aluminum bearings** are foolproof, never need adjustment. They "roll with the punch" of every compressor stroke. Wear is distributed evenly around both inside and outside.

**Closed crankcase** never has to be opened for bearing adjustment, so dirt (the major cause of wear) is kept out of the oil.

**Two-stage, intercooled compression,** with I-R cylinders of proven design, makes most efficient use of horsepower.

**Exceptionally smooth running balance** permits small, simple foundation.

**Compactness** permits installation in small areas, requiring less of your valuable shop space.

**CHANNEL VALVES** give quiet, trouble-free operation and amazing long life due to air-cushioned action and reversible seat plates. Known all over the world for their efficiency, these valves are entirely different in design and principle from any other valve ever used. Channel valves are available only in I-R compressors.

# Ingersoll-Rand

1-381 **11 Broadway New York 4, N. Y.**

COMPRESSORS · CONDENSERS · AIR AND ELECTRIC TOOLS · TURBO-BLOWERS · PUMPS ROCK DRILLS · GAS AND DIESEL ENGINES



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# new Bahnson Collecto-Vac

## FOR COLLECTING LINT AND BROKEN ENDS

Bahnson Collecto-Vacs on frames in Spinning Room of Aleo Manufacturing Co., Div. of M. Lowenstein & Sons, Inc.

**Top textile firms find greater performance advantages with the efficient Bahnson Collecto-Vac**

A PARTIAL LIST OF USERS

M. LOWENSTEIN & SONS, INC.
GRANITEVILLE MILLS
WALTON COTTON MILLS
NEW BRAUNFELS TEXTILE MILLS
BIBB MANUFACTURING COMPANY
SPRAY COTTON MILLS
J. M. ODELL MANUFACTURING CO.
KENDALL MILLS
JOANNA COTTON MILLS COMPANY
CLIFTON MANUFACTURING COMPANY
DACOTAH COTTON MILLS, INC.
MT. VERNON-WOODBERRY MILLS
BURLINGTON INDUSTRIES, INC.
ERWIN MILLS, INC.
JOHNSTON MANUFACTURING CO.
DAN RIVER MILLS
COWIKEE MILLS, INC.
COMPANIA COLOMBIANA DE TEJIDOS
ABBOTT WORSTED MILLS

Bahnson Collecto-Vac

**Mill-proved Collecto-Vac features offer you more for your investment as standard equipment**

**IN MATERIALS:** Attractive anodized aluminum flutes — *no warpage or cracking.* Rugged 14 gauge stamped steel collection box.

**IN DESIGN:** More uniform suction pressure. Scroll type fan discharge to *disperse* motor alley heat, not *concentrate* it.

Belt driven fan for flexibility, or internal motor for economy. (A scroll type fan is used with both designs.)

**IN PERFORMANCE:** Greater cleanliness and collection of flying lint. Positive end collection the length of the frame. Lower horsepower at same CFM and suction pressure.

**FREE BULLETIN**

Write us today for our free booklet containing detailed information on the new Bahnson Collecto-Vac.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING / CLEANING
VACUUM COLLECTION

**91 of the top 100**

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!



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## *Get this New "Perspective on Profits"*

COMPETITION BEGINS . . . and often ends . . . in the weaveroom. But a modern C&K Weaveroom like this one . . . protected with W3 or W3A SELECT-A-PIC LOOMS . . . remains successfully competitive under the most rapidly shifting market conditions and the passing fancies of the buying public. For this exclusive C&K feature permits full automatic weaving on many fabrics that otherwise *cannot* be woven automatically. Every day, hundreds of SELECT-A-PIC LOOMS are weaving a profit margin that will give *you* a new perspective. Want the whole story? Just write:

**CROMPTON & KNOWLES** *Corporation*

**WORCESTER 1, MASSACHUSETTS, U. S. A.**

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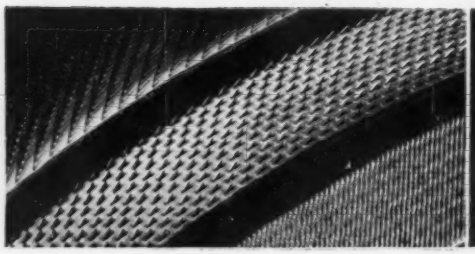

# Ashworth Tips ON CARDING

No. 31 in a Series

## CARD DOFFERS

The doffer on the cotton card is one of the final factors which determine the relative uniformity of the card sliver. You can make the most even inch-for-inch picker lap in the world, but if the doffer is out of round it will undo all the care and attention that has gone into the make-up of the picker lap. By putting into effect the following recommendations, you can eliminate any possibility of non-uniformity in card sliver chargeable to the doffer on the card:

1. Surface grinding the bare doffer prior to application of new clothing is fast becoming standard practice. Should you not be doing this in your own mill, we urgently recommend that you start immediately. Your source of supply on card clothing will furnish you bare cylinder grinders.

2. Not too much attention has been paid to the condition of doffer shafts, shrouds or bearings. In some mills it is common practice to make allowances for those that are worn and compensate for such wear when setting doffer to cylinder. When operating out of round doffers with worn shafts, shrouds or bearings, you cannot hope to produce an even sliver. A systematic check on these two points, with immediate corrective attention, is indicated.

3. While the doffer has never been considered as a cleaning unit, it does remove a considerable amount of pepper trash—depending on the length and condition of the doffer wire and the setting of doffer comb to doffer. This is easily substantiated by checking the accumulation of such waste on the doffer pan, located immediately under the doffer comb and doffer.

4. You can prove to your own satisfaction that doffer fillets with long wire, free of bruises, will do more cleaning and produce a more even sliver, by making a very simple check in your own mill. Compare the accumulation on the pans beneath the doffers equipped with good card clothing as against those worn from extensive grinding, which in addition to being short, are jammed or shedding or both.

5. The doffer comb is a very important adjunct to the doffer itself. Setting of comb to doffer is very important, and it is suggested that a periodic check be made on the setting quality of all doffer comb blades. Too much variation in setting of the blade at the doffer comb fingers, as opposed to space between fingers, prevents the proper removal of stock from the doffer and affects the amount of pepper trash removed from the stock being carded. Such comb blades should have immediate attention.

6. Check the teeth in the comb blades. Bent and rough teeth hang cotton, causing uneven sliver.

7. The comb driving mechanism, including the comb box, should be checked periodically, particularly for wear which affects setting of comb to doffer. This wear can be in the foot end comb stand or in the box itself.

8. The bonnet of the doffer not only protects the card room personnel from possible injury, but is also insurance against damaged doffer clothing. When it is correctly fitted and set, it controls the draft at this point. An inspection of your own doffer bonnets may reveal that some of these have been improperly installed and poorly fitted, which conditions should be corrected.

### ASHWORTH BROS., INC.

*American Card Clothing Co. (Woolen Division)*

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

### PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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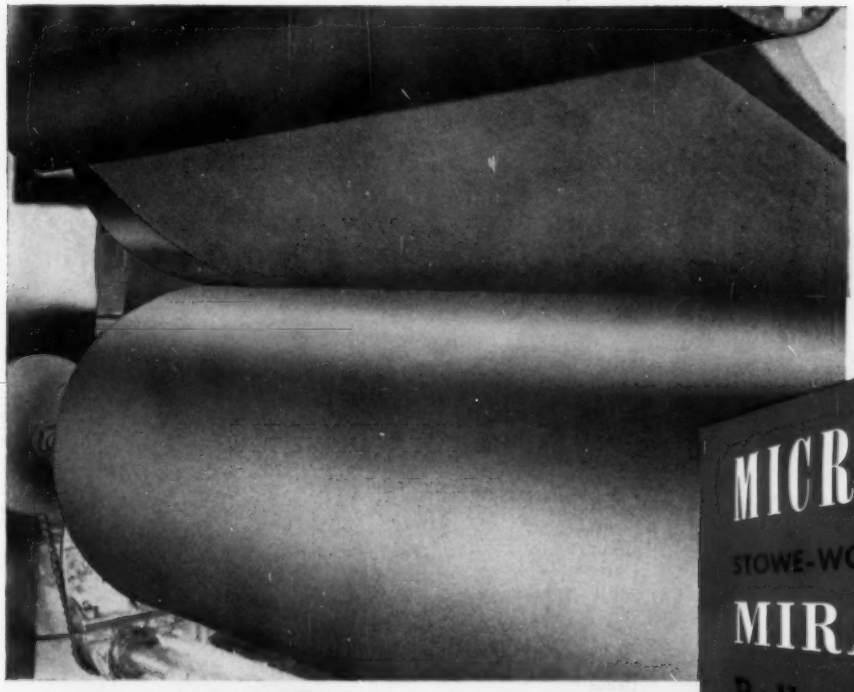
Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS



MICROROK®
STOWE-WOODWARD'S
MIRACLE
Roll Covering

*means higher production,*
*lower maintenance*
*for* TEXTILE FINISHERS

First installed in a carbonizer four years ago, running at high speeds, and subjected to attack by acids, moisture and heat, a Stowe-Woodward MICROROK bottom roll was tested in continuous operation. When removed for inspection after two years, tests showed less than .001" loss of crown. It is still running and two additional MICROROK rolls are now in this plant.

Even without considering the economy of its original cost compared with any metal roll, savings in down-time for maintenance alone are substantial.

MICROROK is a rubber base compounded with micro-mineral particles to produce a cover with the inherent resilience of rubber combined with the permanence of metal. MICROROK resists temperatures to 180°F, is impervious to moisture, chemically inert, acid resistant . . . easier to regrind when necessary, Microrok's microscopic depressions grip fabric, and prevent slippage.

Successful applications now include padders, mangles, squeeze and washer rolls as well as carbonizers. Wherever a roll is expensive to remove for service, is a good place to specify Stowe-Woodward MICROROK. Your Stowe-Woodward Sales Engineer will be happy to discuss specific details.

*"RUBBER ROLLS with a REPUTATION"*

S-W INC.

**STOWE-WOODWARD, Inc.**

*Craftsmen in rubber rolls*

**NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA**



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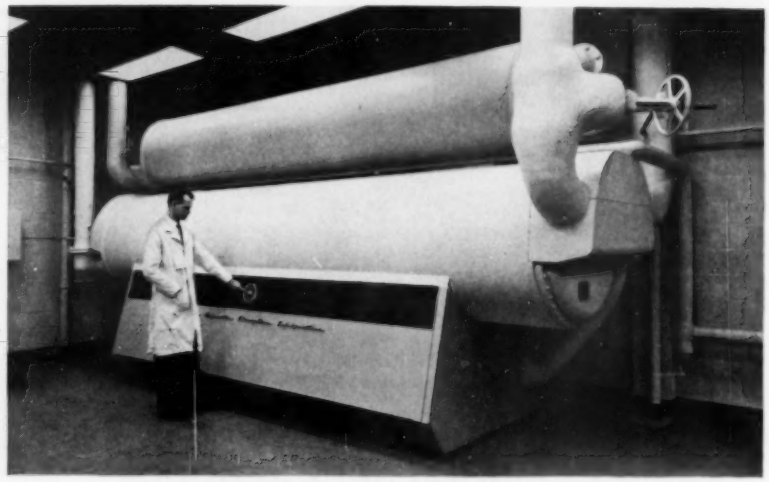
# Carrier Textile News

## *Most Economical Refrigerating Machine of 1956*

## New Carrier Absorption Machine Cools Water With Steam



CARRIER ABSORPTION MACHINES are so simple in design you can carry all the spare parts for even the largest machine in a brief case. They are available in sizes with capacities to fit a wide range of needs—from 100 to 700 tons of cooling.

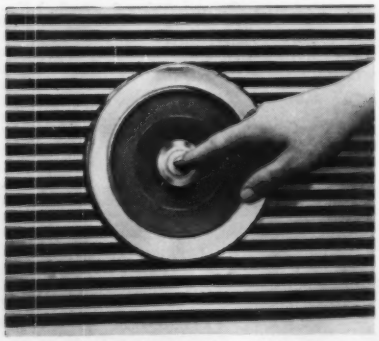
From Carrier—the only people who offer all ways to add cooling on any job—now comes a new absorption machine that cools with low-pressure steam! This cost-cutting water-chilling machine fits easily into your present evaporative cooling system, gives you complete control of temperature and humidity.

Carrier Absorption Machines are simple to install and maintain. The only moving parts are three small pumps and motors, requiring simple maintenance only. No large drivers or switch gear to require attention.

And the machine is safe. Ordinary tap water is the refrigerant. A simple salt is the absorbent. Nothing could be safer.

Carrier Absorption Machines have been performing dependably for years in scores of famous buildings and plants. They serve distinguished companies in 34 states and many foreign countries. The quality materials and skilled workmanship that have made Carrier the most famous name in air conditioning are part of every machine.

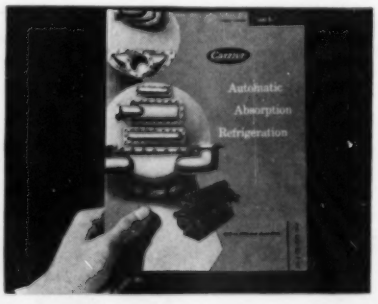
### *Operated by Start-and-Stop Push Button*



AS EASY AS RINGING A DOORBELL. No highly trained operators are required to start the Carrier Absorption Machine in the morning, shut it down at night. Electronic controls do all the "thinking."

### *Fully automatic... doesn't need highly trained operator*

You push a single button on the front of the machine, and electronic controls take over. Push the button again, and the system shuts down. In between, the Carrier Absorption Machine follows the rise and fall of the load from maximum capacity to zero capacity. And the new Carrier Automatic Absorption Machine can't be damaged by overloads.

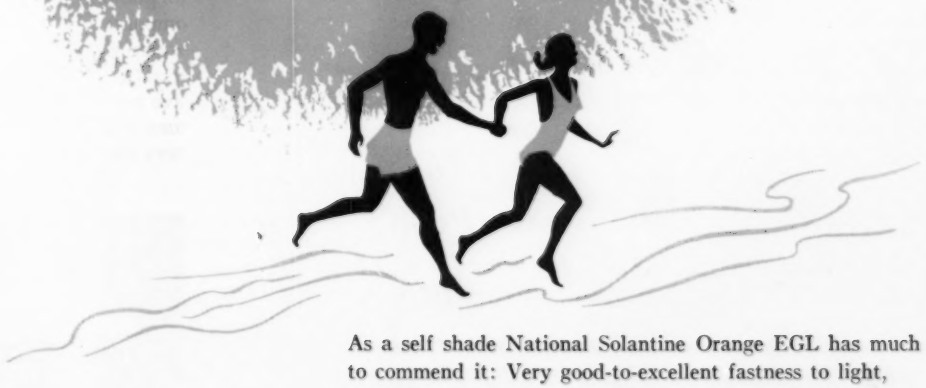



### *Write for Free Booklet*

Find out how the Carrier Automatic Absorption Refrigerating Machine can be the heart of any air conditioning system. For your copy of a new booklet on Carrier Absorption Refrigeration, just call the nearest Carrier office. Or write Carrier Corporation, Syracuse, New York.

*versatile light-fast*
*non-dusting direct dye*

# National Solantine® Orange EGL



As a self shade National Solantine Orange EGL has much to commend it: Very good-to-excellent fastness to light, mercerizing, cold water spotting, sea water bleeding, hot pressing and rubbing plus good wash fastness.

As a component in mixtures for tans and browns, National Solantine Orange EGL has the unique property of contributing exceptional light fastness to compound shades while retaining its other desirable properties.

This National Dye is unaffected by metals in the dyebath, may be applied at low temperature, levels well and discharges to an excellent white with neutral discharge paste.

We want you to have a working sample of this National direct dye so you can try it alone or as a component at your first opportunity. Our nearest office will fill your request.


NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.
Boston Providence Charlotte Chicago San Francisco Atlanta
Portland, Ore. Greensboro Philadelphia Richmond Cleveland
Los Angeles Columbus, Ga. New Orleans Chattanooga Toronto


Allied Chemical

# L. F. Dommerich & Co., Inc.

*Executive and General Offices*

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

# FACTORS

## For Manufacturers and Merchants

L. F. Dommerich & Co. California Corp.

819 Santee St., Los Angeles 14 • TRinity 7171

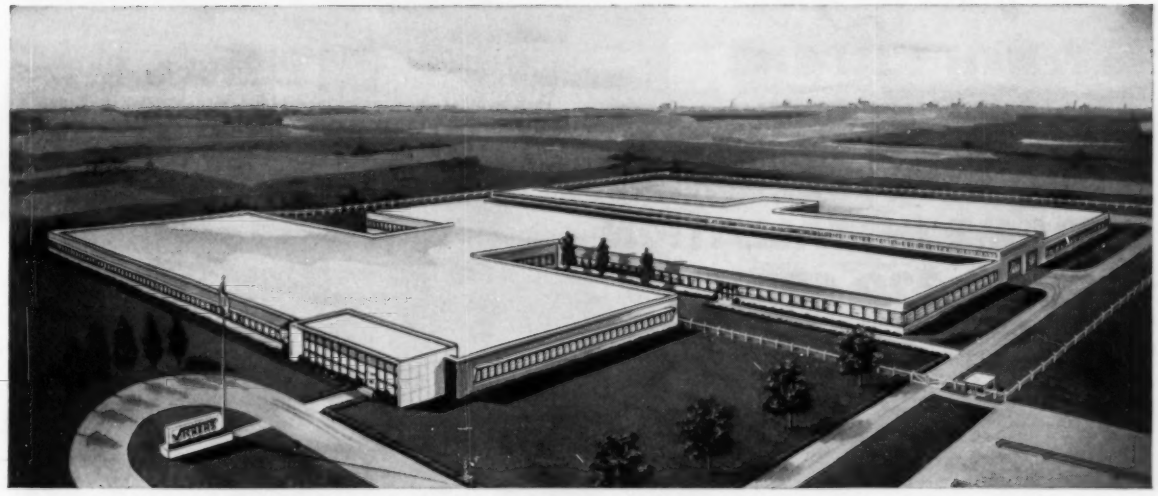
*Inquiries as to our services solicited*

•

BUSINESS ESTABLISHED 1840

# VICKERS

## NEW ADMINISTRATIVE and ENGINEERING CENTER



## Dedicated to the **Development** and **Improvement** of **Hydraulic Components and Systems**

Vickers, a pioneer in oil hydraulics for a wide variety of uses, has maintained leadership through the years by means of aggressive and extensive research.

Continuing rapid expansion of the oil hydraulics requirements of industry has brought with it the need for augmented research and engineering facilities. To meet this need, Vickers has just completed this new building in suburban Detroit . . . 150,000 square feet devoted entirely to research, development, engineering application and administration.

A milestone in Vickers progress, this new Administrative and Engineering Center is also a promise of future benefits to users of Vickers hydraulic components and systems.

**VICKERS INCORPORATED**
*DIVISION OF SPERRY RAND CORPORATION*
**ADMINISTRATIVE and ENGINEERING CENTER**
**Department 1588 • Detroit 32, Michigan**

***Application Engineering Offices:*** **• ATLANTA • CHICAGO • CINCINNATI • CLEVELAND DETROIT • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N.J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS TULSA • WASHINGTON • WORCESTER**
**IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto**

7385

*Engineers and Builders of Oil Hydraulic Equipment Since 1921*

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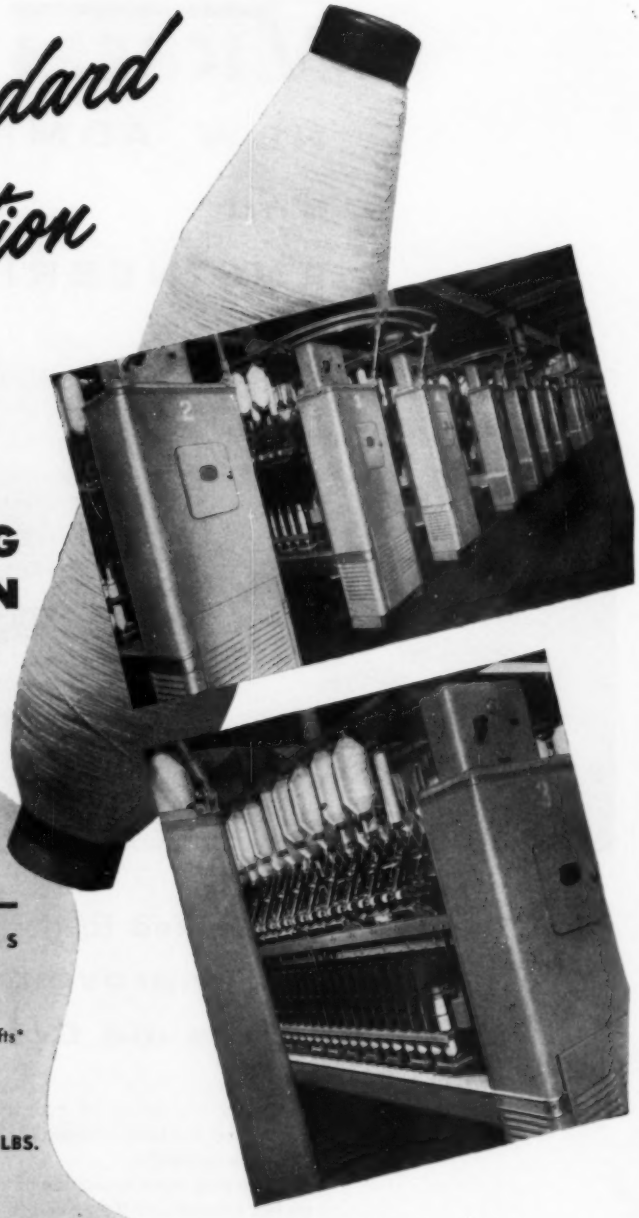
# *A New Standard of Production*



## THIS GWALTNEY SPINNING FRAME INSTALLATION OF 34,320 SPINDLES

***PRODUCED THE RESULTS SHOWN BELOW —***

### MILL PRODUCTION —

**160,000 LBS. IN 120 HOURS USING:**

7 spinners per shift
5 creelers per shift
and a total of 58 auxiliary operatives on 3 shifts*

**ACTUAL MAN HOURS . . .**
Spinning Room, for 120 hours — 3760

**PRODUCTION PER MAN HOUR — 42.55 LBS.**
Warp counts from 8½'s to 30's
Filling . . . . 7½'s to 26's
Calculated average count . 21's

Gwaltney Spinning Frames have demonstrated beyond any doubt their ability to produce yarns that are stronger, far more even, and of higher grade than the same count yarn produced from the same stock with conventional spinning — and this improved quality has been produced at considerably lower operating costs and resultant higher profit.

**Mills interested in matching these standards should have our sales engineer prepare a "Forecast For Savings" based on a Saco-Lowellizing program.**

* Auxiliary operatives include section men, overhaulers, roll pickers, traveler changers, doffers and sweepers.

**SACO-LOWELL**
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA



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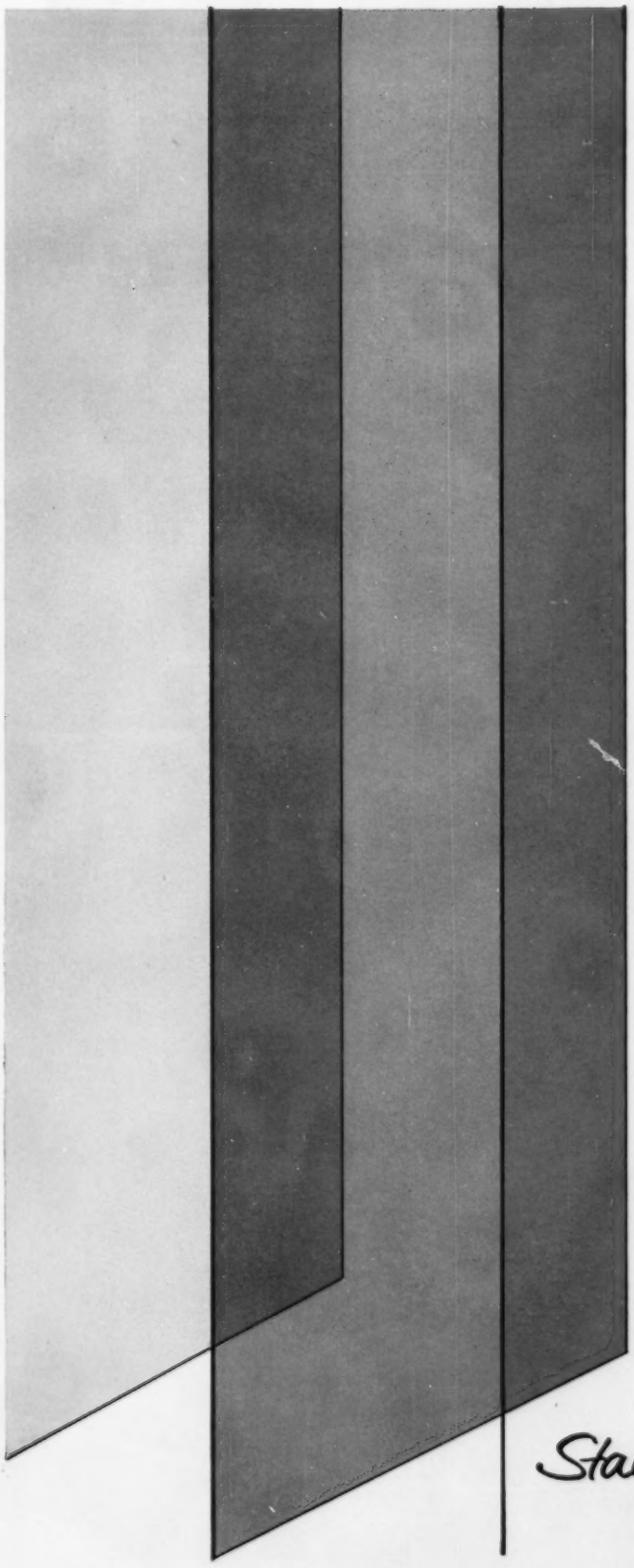

# CARBON BISULFIDE... UNLIMITED!

Manufacturers of viscose rayon, cellophane, grain fumigants and special solvents can look to Stauffer for Carbon Bisulfide of highest purity.

Nine plants throughout the country assure a steady supply of this basic chemical. Anticipating future needs, Stauffer has one *new* plant under construction and another in process of enlargement.

For Carbon Bisulfide of highest purity in drums and tank cars... talk with any Stauffer representative.

**STAUFFER CHEMICAL COMPANY**

**380 Madison Avenue, New York 17, N. Y.**
**Telephone: OXford 7-0600**

Stauffer CHEMICALS SINCE 1885

*Stauffer means service*



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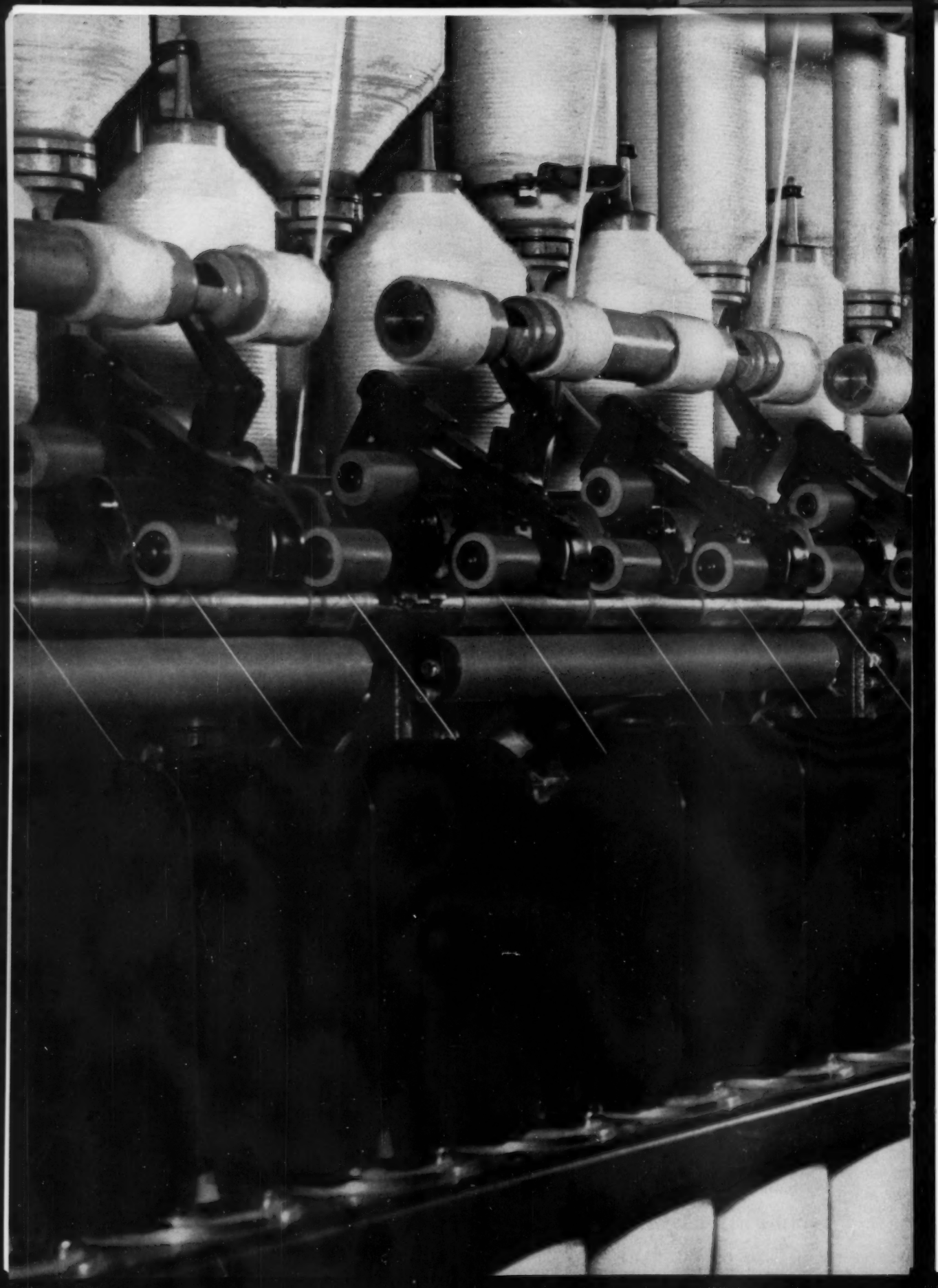

# Not a lap-up in sight!

## THIS MILL USES ARMSTRONG J-490 ACCOTEX® COTS . . . WITH BUILT-IN LAP RESISTANCE

No matter what you're spinning—natural fibers, synthetics, or blends—you'll get far fewer lap-ups with Armstrong J-490 Accotex Cots on your frames.

That's because lap resistance is actually built right into the J-490's. These cots are made of a patented synthetic rubber compound that eliminates the normal electrical attraction between cot and fiber. In fact, the J-490 compound actually tends to repel broken ends.

The J-490 compound is specially made to provide a smooth, clean-running surface. It has no rough fillers to pull short fibers from stock and cause excessive ends down.

Armstrong J-490 Cots are durable, too. They're made of exceptionally long-wearing synthetic rubber—and all that's needed to keep them running like new for years is an occasional re-buffing. Your Armstrong representative will be glad to help you set up a test side of the J-490's. Ask him about it next time he calls.

For more information about J-490 and other Armstrong textile supplies, send for "Armstrong Textile Roll Coverings and Mill Supplies." Write to Armstrong Cork Company, Industrial Division, 6507 Dauphin Street, Lancaster, Pennsylvania.

**P. S. If eyebrowing is a problem in your spinning room, try the Armstrong NO-742-S Cot. Its "constant-friction" surface packs waste well back under the clearers—stops eyebrows from forming. With normal picking schedules, you'll seldom see an eyebrow on frames equipped with NO-742-S Cots.**

**Armstrong** ACCOTEX COTS

*. . . used wherever performance counts*

**Wellman Combing Company, Johnsonville, South Carolina**
This plant, the first wool processing plant in the Southeast, and owned by Nichols and Company, Inc. of Boston, the largest wool treatment concern in the country, recently went into production. It has a capacity of 20 million pounds of grease wool per year, and is planned for enlargement to four times that capacity.

DANIEL CONSTRUCTION CO., BUILDERS

**LOCKWOOD GREENE PROJECTS IN . . . . .**

# WOOL PROCESSING

Lockwood Greene's work, originating in 1832 with the design of textile mills, amounting to a present total of around one billion dollars in value, now includes the first two wool processing plants in the Southeast, here shown, for the world's two largest wool processing firms.

Continuous management services from site selection to plant completion.

**LOCKWOOD GREENE**
ARCHITECTS — ENGINEERS

BOSTON 16, MASS. 316 Stuart Street
NEW YORK 17, N. Y. 41 East 42nd Street
SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE

*BROCHURE AVAILABLE UPON REQUEST*

**Santee River Wool Combing Company, Jamestown, S. C.**
This plant, the second wool processing plant in the South, will have an initial area of 150,000 square feet for the first unit, processing 20 million pounds of wool per year, and is planned for an ultimate expansion to four units. This is the Southern Unit of the Branch River Wool Combing Company of Woonsocket, Rhode Island, owned by Amedee Prouvost of Roubaix, France, one of the two largest wool processing firms in the world.

DANIEL CONSTRUCTION CO., BUILDERS



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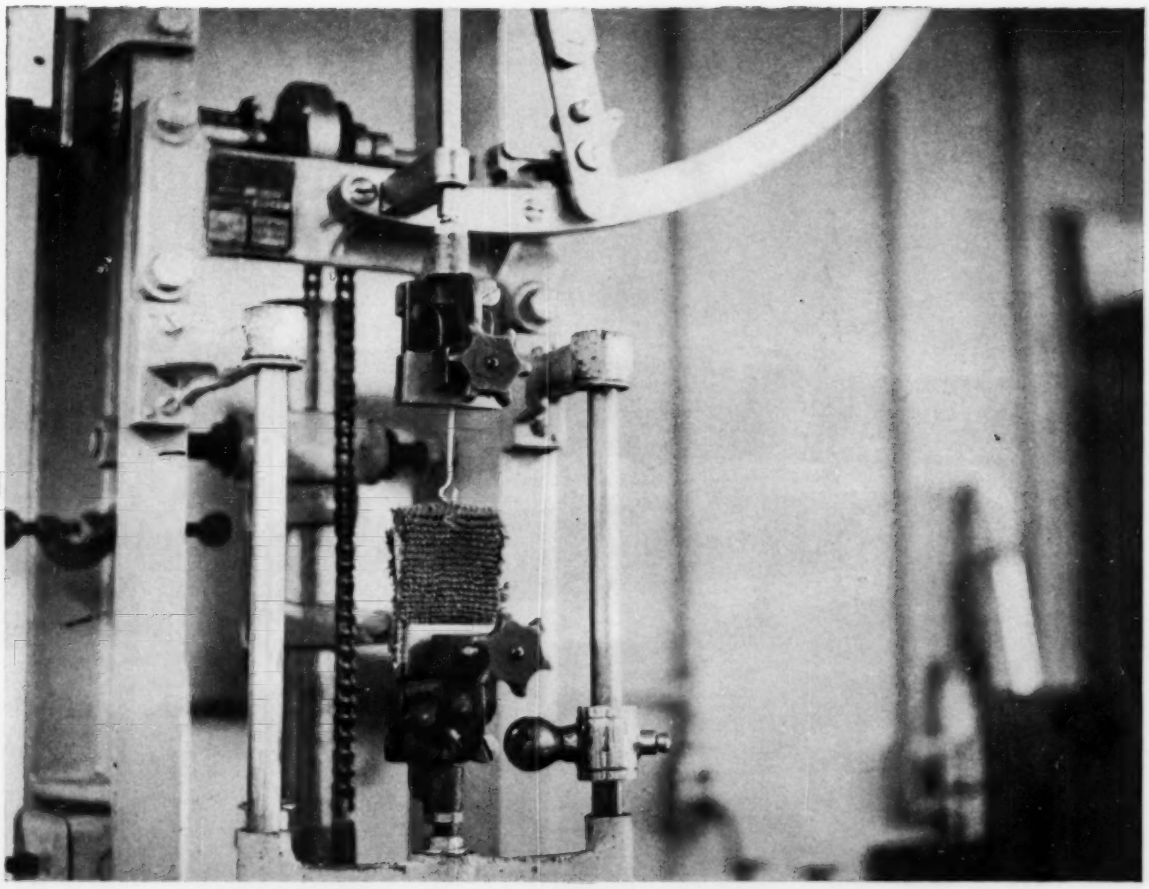

# How to strengthen your hand in rug backings

The last few years have brought many changes in rug backings. The use of latex—either natural or synthetic—instead of starch, has led to backings of greatly improved binding strength, dimensional stability, hand and body that fully resist raveling, wrinkling, washing, mildew and age.

As a result, the secret of strengthening your hand in backings lies in choosing the right latex or combination of latices for the job. And that's why you should know about PLIOVIC LATEX—a water-dispersed, vinyl copolymer resin—and what it does for rug backings.

Used in combination with CHEMIGUM LATEX—a water dispersion of nitrile rubber—PLIOVIC LATEX imparts strength, body and age-resistance to backings that: 1. Exhibit excellent, long-term age-resistance. 2. Provide a "plastic" hand, similar to that of densely woven rugs. 3. Do not impart a "rubber" odor. 4. Do not require curing. 5. Are extremely simple to compound.

Details on PLIOVIC LATEX and/or CHEMIGUM LATEX for use in rug backings plus the latest *Tech Book Bulletins* are yours by writing to:
Goodyear, Chemical Division, Akron 16, Ohio.

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DIVISION

COATINGS
DEPARTMENT

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS
High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries



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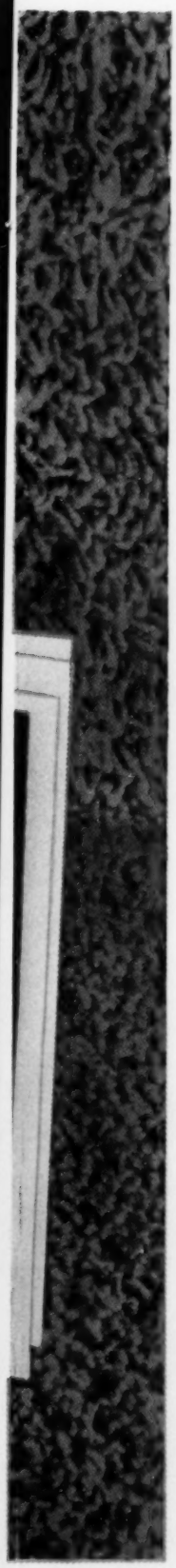
STOCK DYED
PIECE DYED
YARN DYED
TEXTURES
IRC



# the new look in carpeting

**THANKS TO NEW TWIST-SETTING TECHNIQUES DEVELOPED BY IRC FOR THE NEW NYLON STAPLE.**

Fabrics made from IRC's New Nylon staple can be given textures *more permanent than any twist-type carpets now made from wool, cotton or rayon.*

New, permanent textures are now available... in all price brackets... woven or tufted... Saxony... hard twist... nubby... frieze... high and low pile... and all other types.

IRC combines in *one* fiber two characteristics of major importance to The New Look in Carpeting...

- Crimped and Set **for Bulk and Coverage**
- Can be Twist Set **for Permanent Style Effects**

Ask your resources to show you what they have in The New Look in Nylon containing IRC New Nylon fiber.

THE NEW Nylon Staple

I·R·C

**INDUSTRIAL RAYON CORPORATION**

Sales Offices: 500 Fifth Ave., New York 36, N.Y. 627 Guilford Bldg., Greensboro, N. C.



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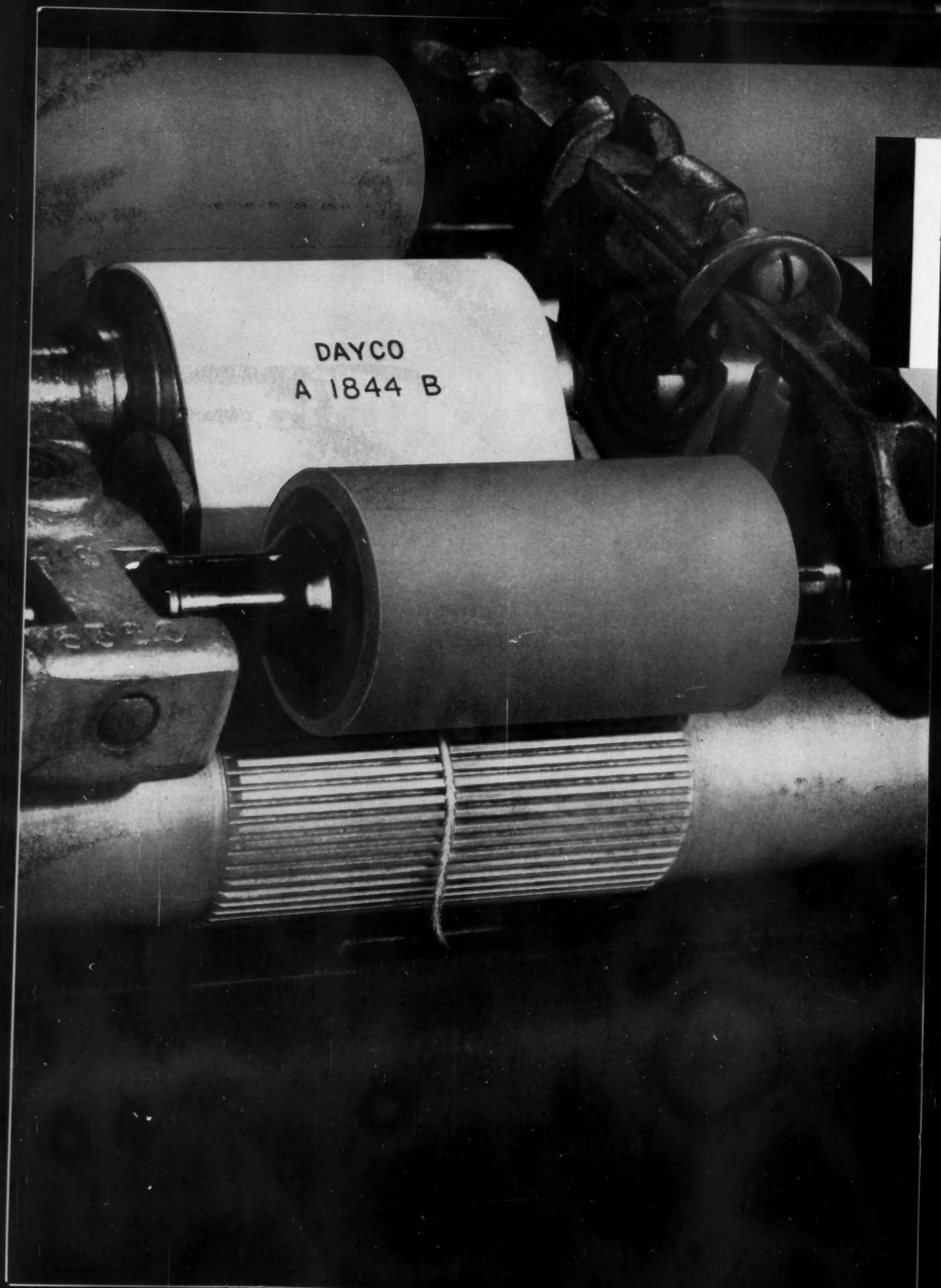

DAYCO
A 1844 B

# Eliminate lap-ups with cots that stay dry . . .

# DAYCO COTS!

That flood of lap-ups you usually expect during the sweltering summer months just won't occur when you have Dayco Cots on your spinning frames.

Specially compounded Dayco Cots are laboratory tested, mill proved to maintain an unvarying and correct coefficient of friction under temperatures and humidity far greater than those found in the hottest, dampest spinning mill imaginable.

Dayco Cots keep their firm body, never become soft or sticky to retard and break the end. They stay dry, won't sweat or become slick. And Dayco Cots contain no large, rough fillers which increase the danger of broken ends.

**Result:** Dayco Cots eliminate the major cause of "dog day" lap-ups. One mill using Dayco Cots actually reduced lap-ups 4 to 1 over other cots.

Dayco Cots save time and money in maintenance, too, because they won't pit or groove and resist glazing. They seldom need buffing, last longer for a substantial reduction in replacement costs.

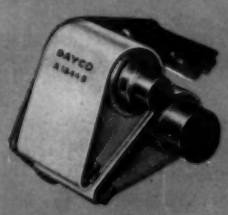
Prove to yourself that Dayco Cots reduce lap-ups, not only during the summer months but all year 'round. Contact your Dayton Representative to arrange a test, or write The Dayton Rubber Co., Textile Division, 401 S. Carolina National Bank Bldg., Greenville, S. C.

## DAYCO LONG DRAFT APRONS

**Here's why Dayco aprons give better drafting control, longer, trouble-free service.**

- Precision ground to .004" tolerance
- Uniform surface density
- Won't stretch or take permanent set
- Unaffected by temperature or humidity
- Won't groove or glaze

Daycos are available for both single and double apron systems.

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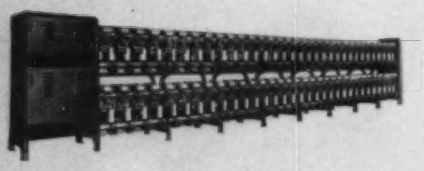
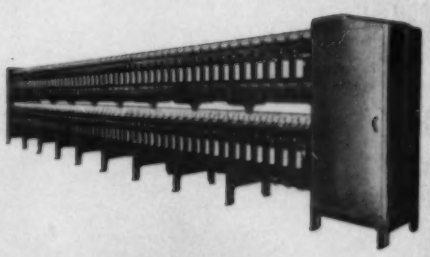
Dayton Rubber 51 YEARS OF PROGRESS

*Dayco and Dayton Thorobred Textile Products for Better Spinning and Weaving*



**U. S. ACME FACE DRIVE TWISTER**

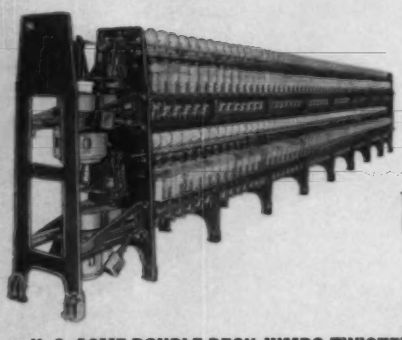
**16 oz. to 24 oz. packages—with spindle speeds up to 14,500 r. p. m.**



**U. S. ACME COMBO DOUBLE DECK TWISTER**

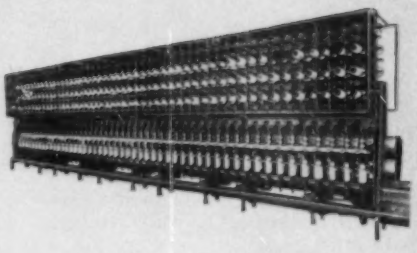
**8 oz. to 32 oz. packages—with spindle speeds up to 14,500 r. p. m.**

# 1,500,000 Marquette SPINDLES...



**U. S. ACME DOUBLE DECK JUMBO TWISTER**

**8 oz. to 16 oz. packages—with spindle speeds up to 12,500 r. p. m.**



**U. S. ACME DOUBLER TWISTER**

**16 oz. to 32 oz. packages—with spindle speeds up to 7,000 r. p. m.**

## ...have been sold as standard equipment on U. S. ACME THROWING FRAMES

More than one and a half million Marquette Roller Bearing Spindles have been furnished as original equipment on frames manufactured by U. S. Textile Machine Co. They are operating efficiently at high speeds with heavy packages, and giving important savings in power and maintenance.

There is a Marquette Spindle for spinning or twisting every type of yarn—cotton, synthetics, wool and worsted—and for all sizes of packages up to 12 lb. gross load. On *any* frame, new or old, Marquette Spindles will help you produce *more yarn* at *lower cost.*

We'll be glad to arrange a test installation to prove the many advantages of Marquette Spindles in *your* mill. Contact our home office or one of our representatives.

***Representatives:*** WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA.
C. H. WHITE, MOUNT HOLLY RD., ROUTE 6, CHARLOTTE, N. C.
R. MICHAEL TURNER, 100 CHESTNUT STREET, CLINTON, S. C.

MARQUETTE METAL PRODUCTS DIVISION
**CURTISS-WRIGHT**
CORPORATION • CLEVELAND 10, OHIO

***Other Marquette Products:*** SPRING CLUTCHES
HYDRAULIC GOVERNORS • AIRCRAFT WINDSHIELD WIPERS
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AMERICA'S LEADING SYNTHETIC DETERGENT

Many economy-minded mills are cutting handling time and costs with Nacconol SL. Being a liquid concentrate, it is easy and clean to use, requires no dissolving. Simply add water to secure the desired working concentration.

And remember this extra, you get more cleaning-power-per-dollar with Nacconol SL (based on an active ingredient basis compared with most dry products). Why not join the mills that are cutting production costs with Nacconol SL?

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol DBX, Nacconol NR and Nacconol NRSF. Send for your sample and see for yourself how effective Nacconol SL really is.

* Alkyl Aryl Sulfonate

Nacconol

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Samples promptly sent on request.

*News about*

# B. F. Goodrich Chemical *raw materials*

# Geon Vinyl Latex...

## opening new markets for textiles

GEON vinyl latex gives new qualities to many woven and non-woven fabrics—upgrades materials for better quality and sales appeal.

HERE'S HOW—

**As a binder for non-woven fabrics** Geon latex makes entirely new materials of many kinds of non-woven fabrics—gives them a durability, tear strength and abrasion resistance that makes new applications pop up everyday. Some of these are: non-woven dish towels and wash cloths with complete water and washing resistance and linings and stiffeners for clothing.

**Impregnated in fabrics** Geon latex is used in bandages and bed sheeting, where as a strengthening and water resisting agent it must also withstand sterilization in super-heated steam.

**As a heat sealable coating** Geon latex is used in non-woven materials between the board stiffener and vinyl upholstery of automobile interiors (on doors) and makes a seal that is moisture insensitive.

To find out how Geon can open new markets for your textile products, please write Dept. DV-4, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

**GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.**

**GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors**



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# MAINTENANCE COSTS

# slashed

## with new Warner & Swasey PLASTIC-BONDED FALLER BARS at Caron Spinning Company

*Nineteen Warner & Swasey Pin Drafters and three Converters produce 24 hours a day at Caron Spinning Company, Robesonia, Pennsylvania.*

● Just 57 faller bars had to be repinned during 15 months' production—average cost, just 7¢ a day per Pin Drafter®. And at Caron's Robesonia, Pennsylvania, plant the four new single head, dual delivery Pin Drafters have been used 24 hours a day, 5½ days a week throughout this time. They produce a variety of synthetic and blended sliver.

Resilient, flat pinned Plastic-Bonded Faller Bars are ideal companions for these new, high speed Warner & Swasey Pin Drafters. Their development is another example of Warner & Swasey's continuing program to provide the textile industry with equipment for faster, lower cost production.

If faller bar maintenance is cutting into your profits, or if you would like more information about the application of our machinery to your work—Pin Drafters, Warner & Swasey-Pacific Converter, Warner & Swasey-Sulzer Weaving Machine®, or Whirlwind* Twister-Winder—it will pay you to call in our nearest Field Engineer.

® Reg. U. S. Pat. Off. *Trademark

### SALES OFFICES

*Main Office and Factory:* 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet Street, North Uxbridge, Mass.
121 11th Street, N. E., Atlanta 3, Ga.
Suburban Square Bldg., Ardmore (Philadelphia), Pa.
624 Pecan Avenue, Charlotte 1, N. C.

**YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY**



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# *NEW TWISTS in stretch yarn processing*

*Build profits in today's hottest market— take advantage of Universal's complete service*

Universal makes the special machines you need for fast, low-cost production of all the popular new bulk and stretch yarns.

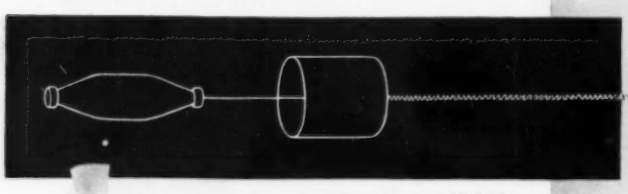
Also, you get expert technical and marketing aid from . . .

*Universal's Yarn Evaluation Department*

This new Universal Department has been established to: set up standards for processing and testing stretch yarns; provide mills with samples; suggest test procedures and appraise samples from mills; and investigate market potentials for new products.

Universal offers you practical, simplified financing, too — through its famous Leesona Pay-As-You-Profit Plans for long-term purchase or lease of new machines while conserving your capital.

At right are shown just a few of the variety of garments that call for new "miracle" yarns produced on Leesona Stretch Yarn Machines. For full particulars on these machines and on Universal's stretch yarn service, see your Universal representative or write direct.



23.5.27

LEESONA

**UNIVERSAL WINDING COMPANY**

P. O. BOX 1605, PROVIDENCE 1, R. I.

*Sales Offices:*
Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles
Winding and Twisting Machinery for Natural and Synthetic Yarns



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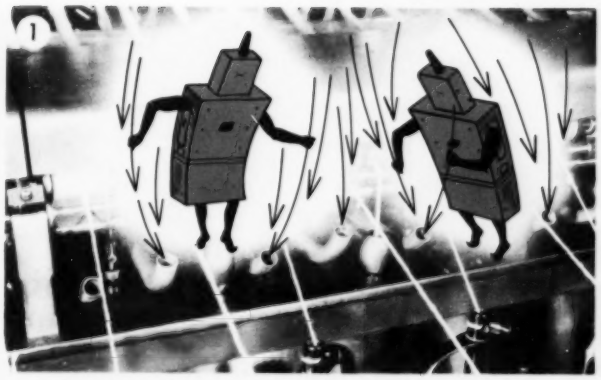
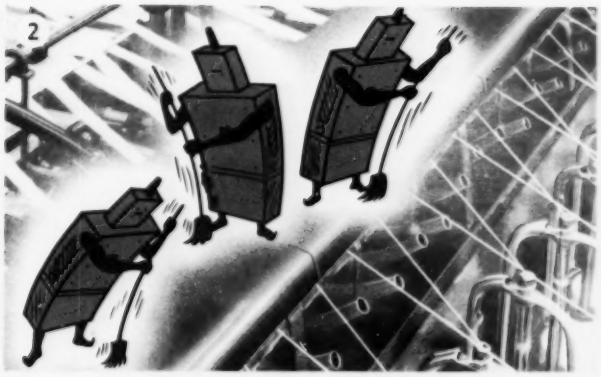
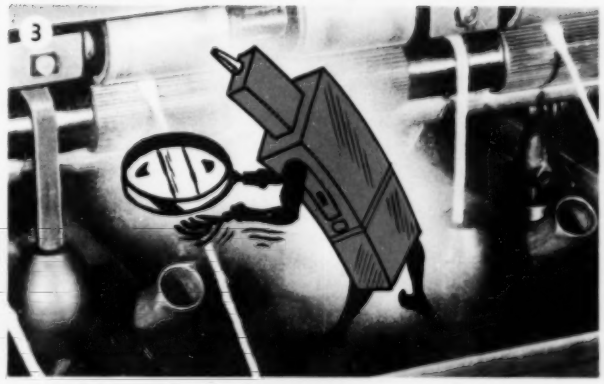
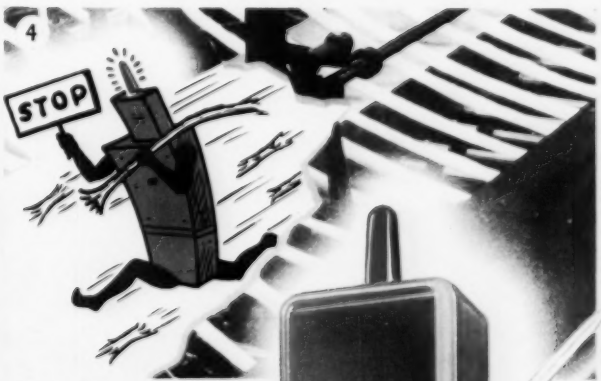



PNEUMASTOP®

# ON GUARD!

1. **HUMIDITY—WHERE IT'S NEEDED**
   Pneumastop literally pulls the humidified air down into the drafting area where it is *really needed*. This means fewer ends down, frame stops, and lap ups. Naturally quality is vastly improved.

2. **CLEANLINESS—A MUST FOR THE MODERN MILL**
   Pneumastop's powerful suction at work in the fly generating area, is constantly picking up loose fly and trash. The result is cleaner frames. For example, flyer picking can be cut in half.

3. **PNEUMASTOP—PRIVATE EYE**
   Flug (slubs, gouts, and foreign matter) is removed from every inch of the strand of roving. There is less fly, so the roving goes to the spinning room cleaner, stronger, more even. Actual tests show that because of Pneumastop, spinning room ends down can be reduced as much as 30%!

4. **ON GUARD—FOR BROKEN ENDS**
   When an end breaks, Pneumastop *immediately* grabs the end keeping it from doubling or knocking down adjacent ends. The frame is instantly stopped (of course, there is a time delay at the traverse change) and at no time is the broken strand ever out of control.

*Hard working, "low wage" Pneumastop is one of the most practical and profitable investments you can make for your mill. Write for more details . . .*

## PNEUMAFIL CORPORATION

CHARLOTTE 8, NORTH CAROLINA

*Atlanta, Georgia* • *Needham Heights, Mass.*

Copyright 1956 Pneumafil Corporation

# 175,000 spindles in 40 mills are being equipped with Pneumafil® each month!

The all new Pneumafil system converts spinning frames to sparkling, cleaner than ever frames with higher than ever spinning efficiency—and with better than ever yarn quality too!

This new Pneumafil equipment was developed after 10 years of working with mills on their spinning problems. New improvements, now in the making, will naturally be incorporated in or adaptable to this new flexible Pneumafil system, giving you the very best long and short range investment of this type equipment available—ANYWHERE!

*Remember—there* **is** *a difference.*

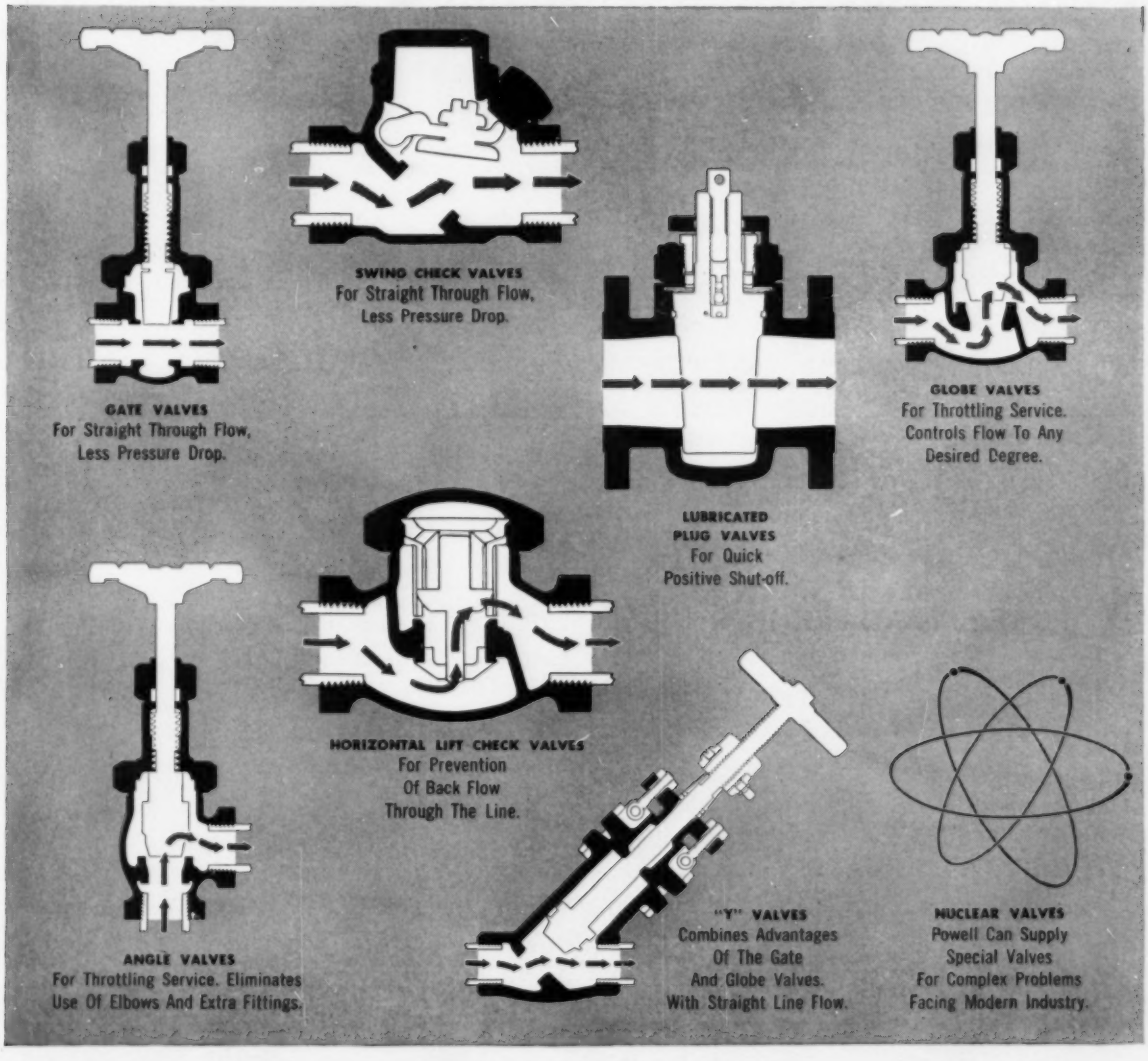
PNEUMAFIL®

**PNEUMAFIL CORPORATION**

CHARLOTTE 8, NORTH CAROLINA

*Atlanta, Georgia* *Needham Heights, Mass.*

# POWELL
## for all valve needs




## for every flow control problem there is a right Valve

Powell can supply this right valve—*made right* of the right material*. Every part of every valve must pass rigid inspection. And as a final step in manufacture, every Powell Valve has *Performance Verified* through an *actual line test.*

As an aid in selecting the right valve, the basic valve designs are illustrated here. For complete information on the wide range of sizes and materials available in each type of the basic valves illustrated above, consult your Powell Valve distributor. If none is located near you—or if you have a special flow control problem—write direct to The Wm. Powell Company, Cincinnati 22, Ohio.

PERFORMANCE
PV
VERIFIED

**The Wm. Powell Company, Cincinnati 22, Ohio . . . 110th YEAR**

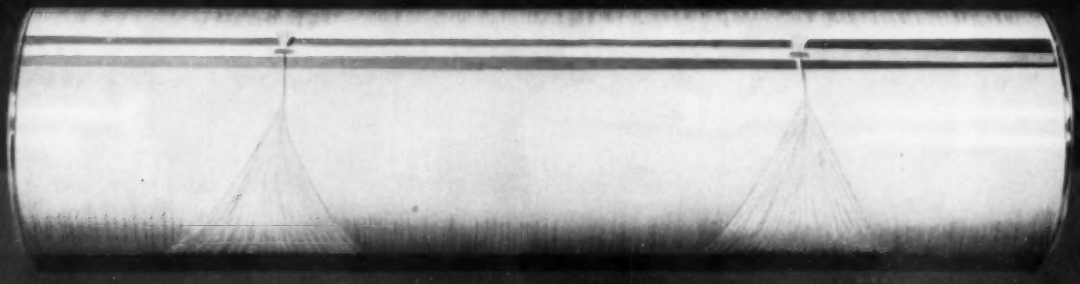
# POWELL VALVES

*BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.



For more data, write this page number on Reader-Service card. →

# New Celanese 21″ x 84″ Beams offer definite advantage to tricot knitting trade



New 84″ beams are now being offered to the trade, after trial shipments of knitting sets which indicated simplified handling, improved quality, increased production.

**FEWER BEAMS PER SET:** The bigger size reduces the number of section beams required to make up a set. This means simpler handling from the very start.

**EASIER LOADING AND THREADING UP:** New 84″ beam cuts time and effort required to load and thread up machines. It simplifies setting up, starts production faster.

**IMPROVED QUALITY:** Gained because flanges are reduced by respectively eight and sixteen when compared with 42″ and 21″ beams. Flange reduction lessens the possibility of causes for defective fabric as high or low edges causing streaks; broken filaments and ringers due to flanges or edge ends (these in turn cause drag marks); high and low cover bands from varying beam circumferences, tapered beams or high or low edges.

**INCREASED PRODUCTION:** The 21″ flange doubles knitting production time as compared to 14″ flanges. This in turn reduces the time for creeling in the same ratio.

For further information, write
Celanese Corporation of America,
Textile Division, Charlotte, North Carolina.
Celanese®

Celanese Fibers For Industry



← For more data, write this page number on Reader-Service card.

for better fit!

# Sonoco Cones for every need

for better delivery!

Precision winding starts with precision made cones. Without precision winding you cannot get the sound yarn package that delivers at even tension and without break. SONOCO cones are made to fit the winding mandrel accurately. This, coupled with special SONOCO process surfaces for every type of winding job, results in a perfect package that insures smooth, even delivery of yarn under high speed working conditions. Cone surfaces include plain, high and low mark, Velvet and Unitex. SONOCO cones are made with notches, scores and in many nose designs. Lacquer tipping, dyed base and tip, striped base and colored paper can be furnished for yarn identification. Consult your SONOCO sales-engineer, or write us direct for prompt service.

sonoco
PAPER CARRIERS
REG. U.S. PAT. OFF.

**SONOCO PRODUCTS COMPANY**

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY



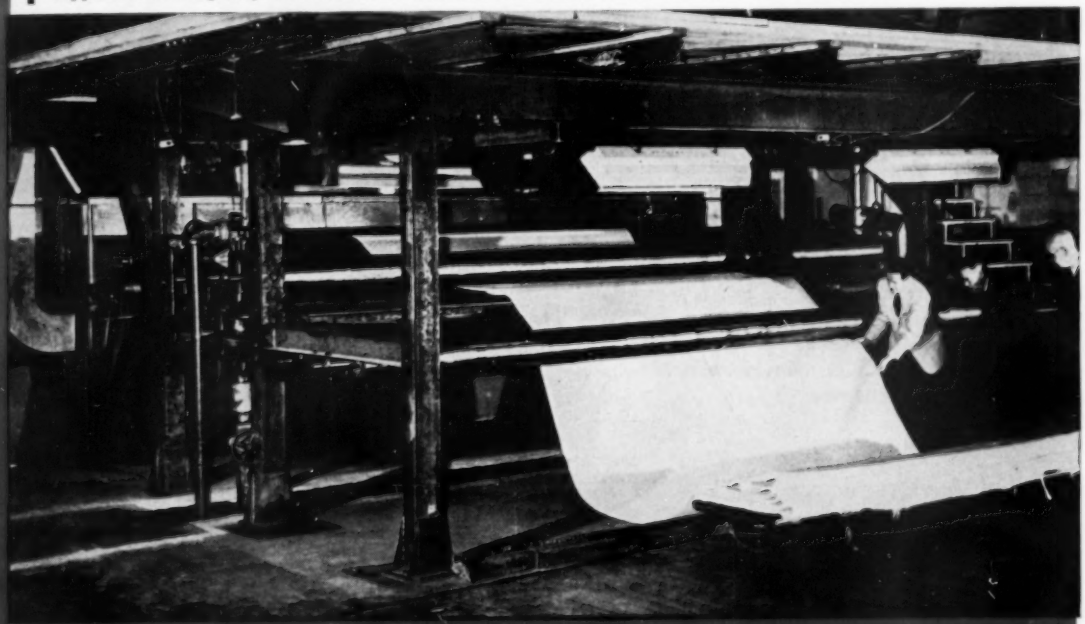
For more data, write this page number on Reader-Service card. →

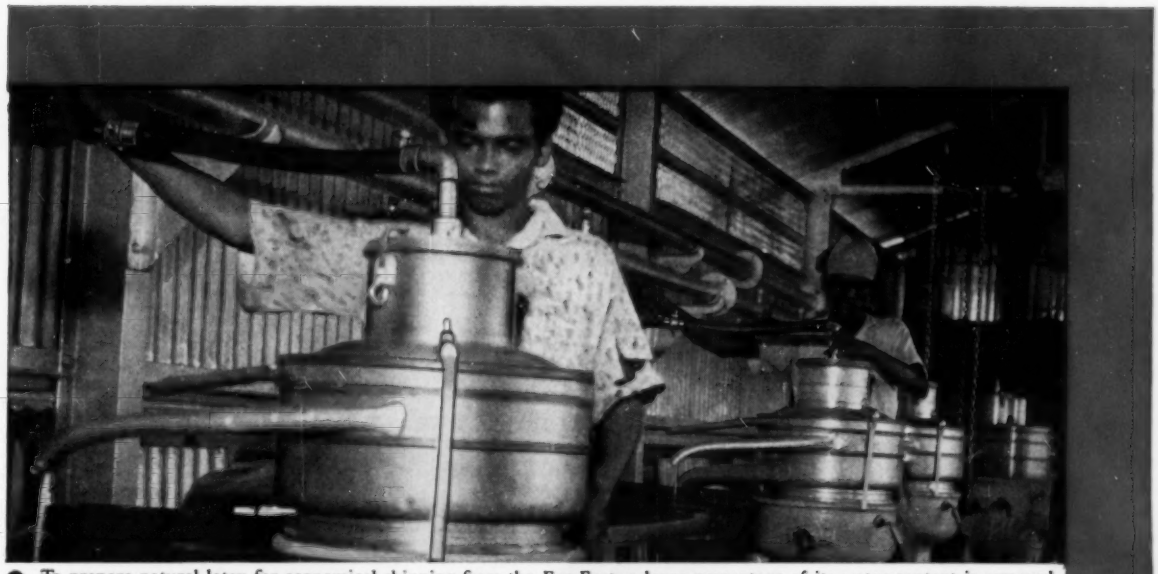
1 Flow of natural latex is started early in the morning by cutting away a one-fifteenth-inch strip of bark. To prevent spoilage, the latex is collected before noon of the same day.

2 Tank trucks speed latex from collection stations to the central processing plant, where laboratory tests are made and ammonia is added as a preservative during shipment.

# It's Naugatuck for

4 Latex comprises an important part of the custom-compounded, ready-to-use LOTOLS® which Naugatuck Chemical supplies to leading carpet manufacturers and textile mills for the back-sizing of tufted carpet and upholstery fabrics.





**3** To prepare natural latex for economical shipping from the Far East, a large percentage of its water content is removed by creaming (skimming) or centrifuging. The centrifuges used are similar to cream separators in appearance and operation.

# Latex...Natural or Synthetic!

Despite the increasing emphasis on Naugatuck's chemically-made rubber latices, don't forget that Naugatuck maintains a steady flow of natural Hevea latex from the United States Rubber Company's extensive plantations in Sumatra and Malaya... delivered to East and West Coast in ample supply.

The method of obtaining this milky white substance from the Hevea Brasiliensis tree is still rather primitive. But, from this point on, the science of rubber chemistry has taken over to insure purer, stronger and more uniform grades of natural rubber latex for foam rubber cushioning and mattresses, elastic yarns, tire cord dipping solutions, adhesive tape, wire insulation, dip molding and many other purposes for which natural latex may be preferred.

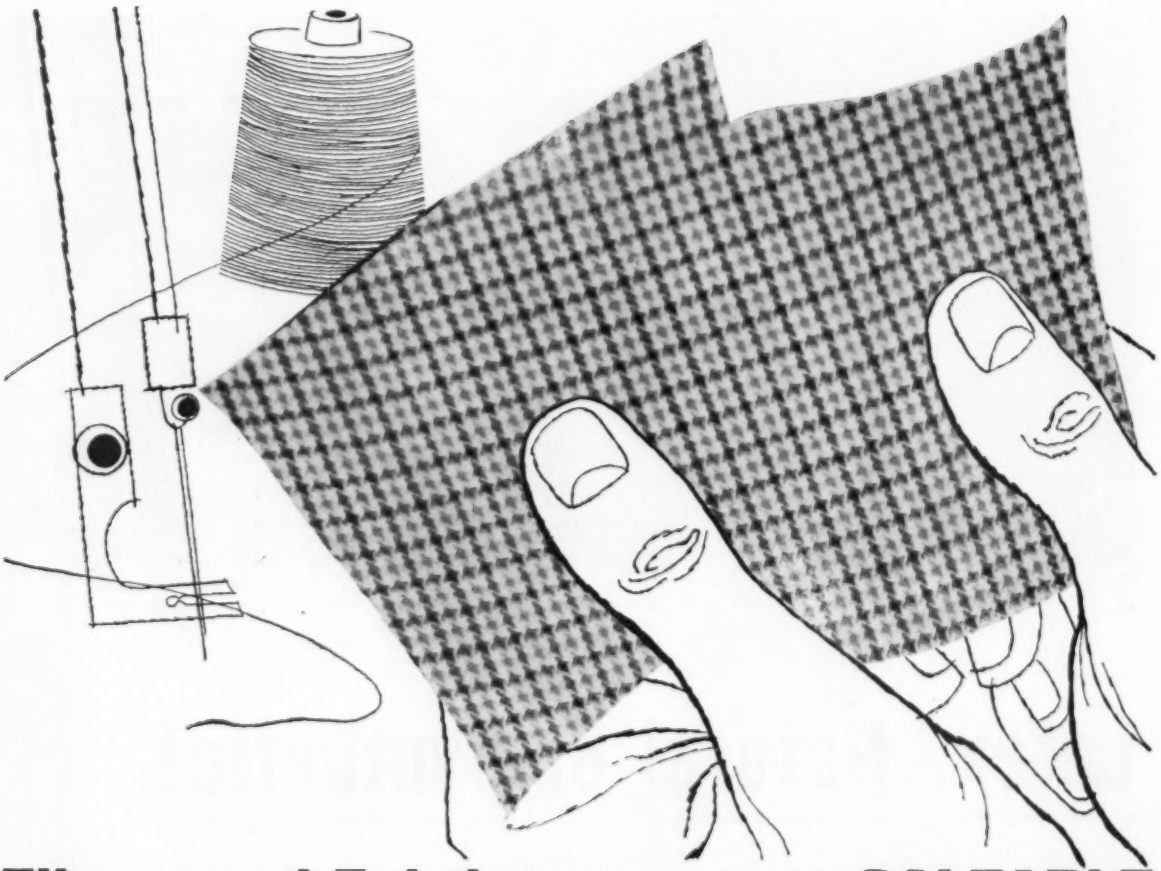
Naugatuck offers Hevea latex of the finest quality in four basic types: creamed, low-ammonia cream, centrifuged and super centrifuged. It is shipped in 55-gallon drums or 10,000-gallon tank cars. For details, current prices and technical assistance, contact any of the plants or branches listed below.

**United States Rubber**

**Naugatuck Chemical Division**

Naugatuck, Connecticut

BRANCHES: Akron • Boston • Chicago • Memphis • New York • Phila. • Mfg.: Los Angeles • Gastonia • Naugatuck • CANADA: Naugatuck Chemicals, Elmira, Ont.
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.



# Fibers and Fabrics are more SALEABLE

# Processing is SMOOTHER

## when you use . . . Profine

One of the most important advantages of Profine is its ability to make all types of fibers and fabrics easier to handle.

*As top dressing for resin finished fabrics,* Profine imparts superior abrasion resistance, provides excellent lubricity, improves sewing properties, and improves hand.

*In back-filling,* Profine improves the feel of cloth, provides cutting and sewing lubricity, and reduces dusting.

Treated with Profine, *cotton knitting and weaving yarns,* industrial sewing threads, and wool blend knitting yarns are more supple . . . easier handled.

*Profine improves the "sewability" of fabrics . . .* Minimizes fusing, needle holes and cut threads . . . facilitates high-speed cutting and sewing.

*As a napping assistant,* Profine gives you a softer, loftier nap . . . often reduces the number of naps previously necessary.

*On knit goods,* Profine lessens the tendency for edges to curl during rolling, cutting and sewing. Effectively lubricates yarn for knitting.

*As a sewing assistant on nylon tricot,* Profine is tops.

Profine is helping many a textile processor turn out better finished, more saleable fibers and fabrics. There's a good chance that Profine can help smooth out processing operations in *your* mill.

**PROCTER & GAMBLE** Textile Finishes Sales Dept. • Gwynne Building, Cincinnati 2, Ohio

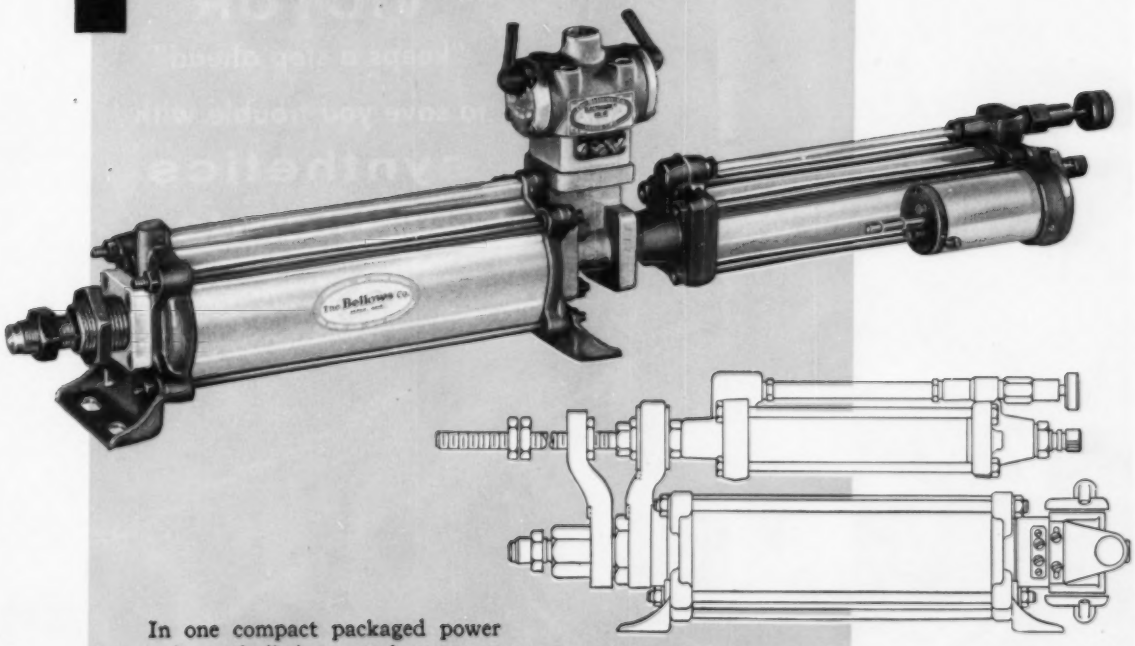
*Makers of Olate, Proxol, Kyro and Orvus Products*



← For more data, write this page number on Reader-Service card.

# This AIR CYLINDER features—

1. BUILT-IN *HYDRAULIC CONTROL*
2. BUILT-IN *ELECTRIC CONTROL*
3. BUILT-IN *SPEED CONTROLS*




In one compact packaged power unit are built-in controls to cover every phase of air cylinder operation. Built-in hydraulic control of piston rod movement gives the smoothness characteristic of hydraulic operation, yet retains the speed and flexibility of air power. Built-in electrically controlled directional valve permits quick, positive, push button remote control, or easy electrical synchronization with other machine elements. Built-in speed controls permit exact control of piston rod speed in either or both directions.

This combination of Bellows Air Motor and Hydro-Check is available in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½" in standard stroke lengths up to 18".

Here is air cylinder power at its best—fast, flexible, safe, and smooth.

**BULLETIN ML-3 TELLS THE STORY. WRITE FOR IT TODAY! DEPT. DN556**

## The Bellows Co.

**AKRON 9, OHIO**

**TWO MOUNTING STYLES**

*The Bellows Air Motor and Hydro-Check (Model HCB-EM) is available arranged in tandem as shown above, or in parallel, as sketched.*

●

*Combination units of Air Motor and Hydro-Check are also made with any one of six other Bellows directional valve arrangements; and, of course, Air Motors and Hydro-Checks are available as separate units.*

*Controlled Air-Power*

**FOR FASTER, SAFER, BETTER PRODUCTION**

1381-A



For more data, write this page number on Reader-Service card. →

Many strange fibers are "meeting on the frames" today, as new developments continually increase the number and variety of synthetics and blends.

Controlling these new fibers and filaments in spinning or twisting can be tricky business. And you seldom have much time for experiment. Let Victor *experience* take the place of costly trial-and-error.

Victor "keeps a step ahead" by working with the producers during development of new synthetics. That's why, when they reach you for production, Victor is prepared to help you overcome any new processing problems they present.

When you need help to get top-quality and trouble-free production—with synthetics, blends, or natural fibers—call in a Victor Service Engineer. Write, wire, or phone the nearest Victor office for prompt service.

*Keep a Step ahead with*

**VICTOR Ring Travelers**

**VICTOR RING TRAVELER COMPANY**

PROVIDENCE, R. I. . . . 20 Mathewson Street . . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . . Tel. UNiversity 5-0891



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*"Just pack, strap, stencil!"*

Packaging is routine since Textiles, Inc., adopted H & D corrugated boxes to carry its annual $22 million in yarn with never a mishap. May we simplify your packaging program, too? Check H & D.

**HINDE & DAUCH**

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 40 SALES OFFICES




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# A Message to Management about DRYING EQUIPMENT

## No. 2 in a Series

## "LET'S LOOK AT THE RECORD"

IN our previous message we pointed out that, by the time cotton, wool or synthetic fibres reach the dryer, their original raw value has been multiplied many times; therefore that they require the best in drying equipment; also that the same signposts which point to the best doctor, lawyer, etc., point unerringly to the best drying equipment.

The first signpost which we mentioned and discussed was "reputation". In this message we propose to discuss another signpost — "achievement". Hence the title, "Let's Look at the Record" (with apologies to Al Smith).

### A & G ACHIEVEMENTS

When we speak of "achievements", we refer to improvements in drying equipment which we *originated* and in some cases patented. We would not hesitate to adopt innovations which someone else originated, if we could legally do so and if our customers would benefit. However, to date we have not found it necessary. It seems to have been the other way around. We *do* hesitate to change designs just so we can offer something "new". In fact we don't. All changes we have ever made have had to *prove* their value in mill operation before they have become standard equipment. And these changes *have* proved their value: — *Cloth that took half a minute to air-dry prior to World War II can now be dried in our improved units in 10 seconds or even less.*

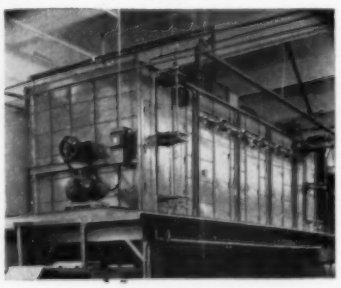
What *are* our achievements? We can do little more than list them here. However, we think you'll agree that it's a rather impressive list and, to the best of our knowledge, no other manufacturer of drying equipment can match it.

1. SELF SUPPORTING PANELLED HOUSING. Since our patents on this construction have run out, it has been adopted by other manufacturers — the best recommendation of its value. It greatly facilitates erection and disassembling when moving.
2. STEAM HEATING COILS which take up less room and can be easily cleaned.
3. AIR DISTRIBUTION NOZZLES that have doubled production in many cases.
4. ROLLER TYPE DRYERS which have replaced can dryers in many types of work.
5. TENSION CONTROL ROLL DRYER. Tension is controlled by a single knob on the A & G free-wheeling roll drive.
6. A ROLLER TYPE CURING UNIT for resin treated fabrics, producing the proper time temperature reaction with a minimum loss of tensile strength.
7. BALANCED AIR TENTER DRYING SYSTEMS. Very high capacities without distortion of filling or unwanted increase in width, yet retaining uniform drying back to face and selvage to selvage on either pin or clip chains.
8. DYE RANGE DRYERS and AIR PRE-DRYERS.
9. SUPER-HEATED WATER VAPOR DRYING. Evaporated moisture is reheated and recirculated, thus improving drying efficiency and hand of fabric.
10. A PERFECTED GAS HEATED DRYER, including pushbutton control and prewired approved safety circuit.
11. A FULL SCALE AIR DRYER FOR THE CARPET INDUSTRY, utilizing rolls, conveyors and tenter frame.
12. SPECIAL DRYERS FOR GLASS FIBRE INDUSTRY.

Anyone who wishes additional details regarding any of these achievements may have them for the asking, free of all obligations.

NOTE: Next month we will discuss another "signpost" which points to A & G Drying and Ventilating Equipment as the BEST. We plan to reprint this series of ads and will be glad to put you on our mailing list, free of all obligations, if you so desire. Just send us your name and title on your company letterhead.

A & G VAPOR DRYER FOR ALL TYPES OF FABRICS — a very efficient and widely used machine. It utilizes rolls and patented air nozzles. The latter make possible such a high rate of production that the unit can frequently be made in a size which can be suspended from the ceiling. This saves valuable floor space.



**ANDREWS and GOODRICH, Inc.**

**336 Adams Street, Boston (Dorchester), Mass.**

*Southern Representatives:* McSpadden & Scantland, Charlotte, N. C.

# For **smoother** knitting and **fewer** seconds use GULFTEX, the non-staining needle oil

Gulftex oil keeps needles clean and smooth, resists gumming and minimizes the build-up of deposits on needles. Result: Smoothest knitting and fewer seconds!

Gulftex also has superior non-staining characteristics that make it a valuable lubricant for any application where the staining of fabrics is a problem. It is easily applied with spray, brush or plastic squeeze bottle.

Scores of hosiery mills report excellent results with this outstanding needle oil. Let us prove that it can do a better job in your mill!

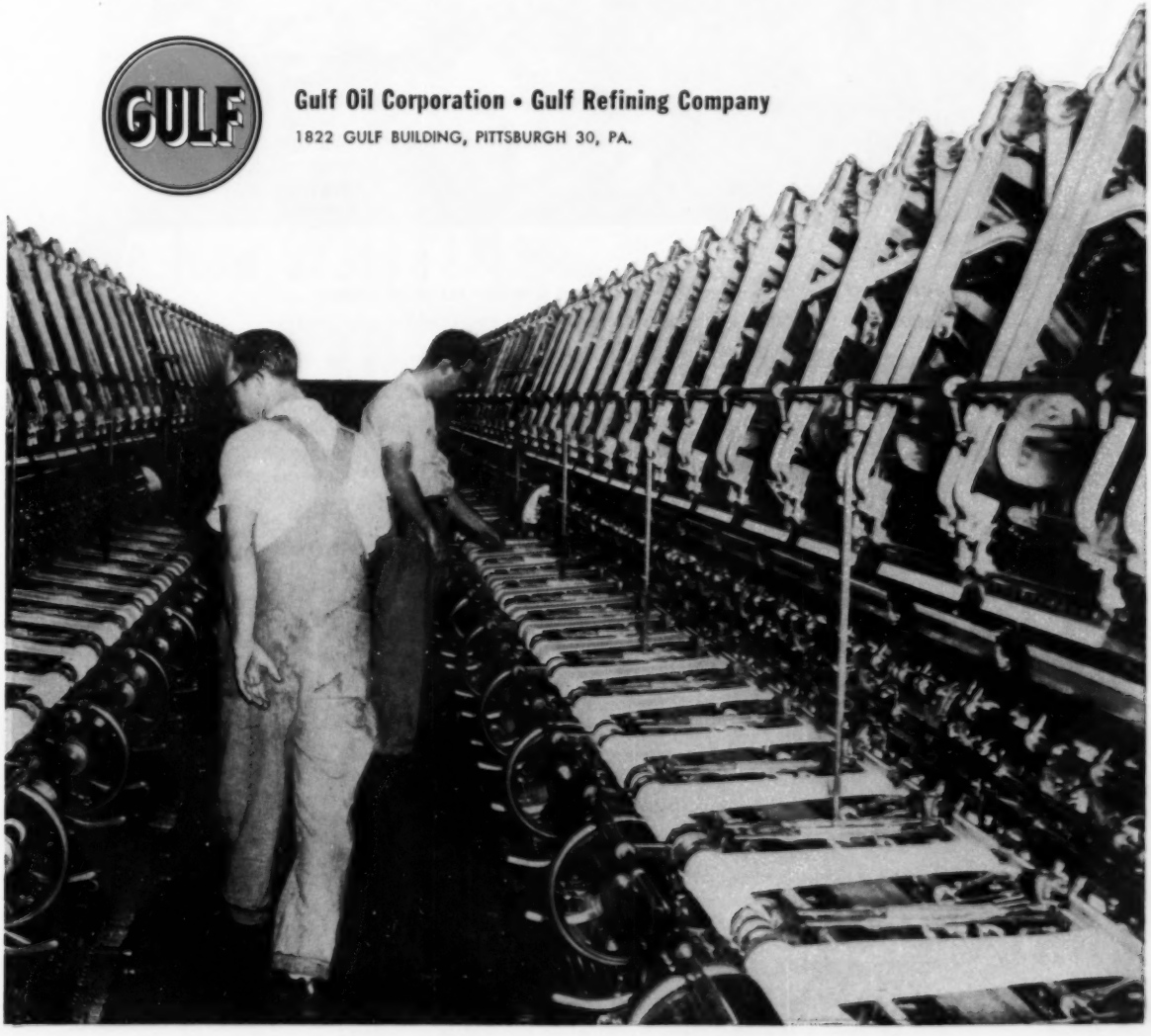
Consult the yellow pages of your telephone directory to contact your nearest Gulf office, and have a Gulf Sales Engineer call.

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

**Gulf Oil Corporation • Gulf Refining Company**

1822 GULF BUILDING, PITTSBURGH 30, PA.





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# AVISCO RAYON, the "muscles" in this beltroad, is produced in a wider range of high-strength yarns than any other brand

American Viscose Corporation produces a wider range of both high-strength staple and filament yarns than any other manufacturer.

Avisco Rayflex yarn, standard Avisco 2200 denier tire yarn, Super Rayflex yarn, and Viscose 32-A high-strength rayon staple are also preferred by users because of three important factors:

**1—their superior strength and durability**

**2—their dimensional stability in processing**

**3—the thorough, professional service offered by American Viscose representatives**

Indeed, the excellence of Avisco fiber research, production and marketing knowledge is why so many leading American industries GROW WITH AVISCO rayon.

AVISCO

Perhaps you would like to know how you can grow with the products and services of the nation's leading producer of rayon.

Just write: American Viscose Corporation
350 Fifth Avenue
New York 1, N. Y.



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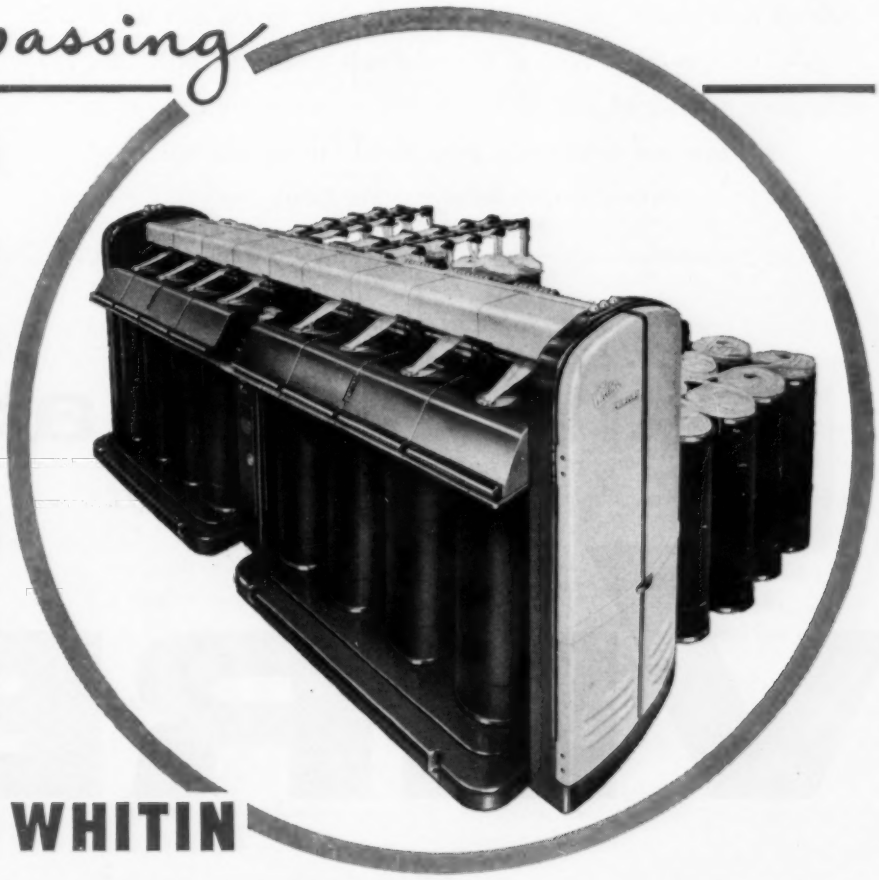
# Surpassing all present-day standards of drawing . . . . . ...the New WHITIN



## EVEN-DRAFT* Drawing Frame

Seldom has any new textile machine had so pronounced an impact,—been so definitely successful — as the new Whitin Even-Draft Drawing Frame. In many large installations (up to 80 deliveries), mills report production doubled or tripled, sliver quality reaching levels formerly unattainable, and costs slashed to new lows. In short, all current standards for drawing have been completely surpassed by this new Whitin high production, precision-made textile machine.

**From 250-300 feet per minute Front Roll Delivery**

Production two to three times more than conventional machines, depending upon mill conditions and production needs.

**For all fibers up to 3"**

The first universal drawing frame — for cotton, spun synthetics and blends.

**Outstanding Sliver Quality**

Improved uniformity in both carded and combed sliver — 6 or 8 ends up.

**Pneumafil Clearer Units**

A brand new way of removing waste fibers. Developed for, and an integral part of, this machine.

**Entirely New Design**

Two independent four-delivery heads, vibration proof construction; precision tolerances; anti-friction bearings; unique four over five roll drafting; new overarm weighting; no-twist can table; electronic stop motions and signal lights; 14" — 15" — 16" cans, 36" or 42" high.

*TRADE MARK

WHITIN MACHINE WORKS FOR 125 YEARS ONE COMPANY WITH ONE PURPOSE SERVICE TO THE TEXTILE INDUSTRY 1831-1956

# Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



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# the facts about

# VEREL

## the new

## Eastman

## modified acrylic fiber

What the textile industry wants today are fibers that fit the job. And Verel is a specialist. It has its own set of properties, many of which can be heightened or controlled to fit specific needs. Look over this check-list and see how Verel can meet your special requirements.

( ) **Unusually kind, soft hand** which makes possible fabrics with a new degree of luxury and comfort.

( ) **Ease of processing and dyeing.** Verel can be processed on conventional textile equipment without difficulty. It can be dyed in raw stock, skein or piece goods with available dye-stuffs on regular equipment. In fact, with pre-metallized dyes you get light-fastness superior to that obtained with any other acrylic-type fiber, using any form of dye, regardless of cost.

( ) **Controlled heat shrinkage** which enables you to get almost any degree of bulk, density and resilience you want. Both stabilized and unstabilized forms of Verel are available.

( ) **High moisture regain** contributes to freedom from static in mill processing and gives greater wearing comfort. Actually Verel has a moisture regain double that of any acrylic fiber today.

( ) **Outstanding whiteness** which ordinarily makes bleaching unnecessary.

( ) **Excellent resistance to chemicals** covering a wide range of acids and alkalis.

( ) **Good fire-resistance** which permits manufacture of drapery, pile-type, and napped fabrics free of flammability hazards.

( ) **Good press and shape retention.**

( ) **Good wrinkle recovery.**

( ) **Low pilling tendency.**

( ) **Other important advantages.** Verel has a high tensile strength, excellent stretch or elongation and good abrasion resistance. It is immune to moths and mildew...weather-resistant and non-allergenic.

First appraisals of Verel show that it has an important future in such varied fields as men's and women's apparel, knitwear, socks, pile-type fabrics, home furnishings and industrial fabrics.

Its special properties make Verel particularly useful in blends with cotton, wool and other fibers. Right now mills and manufacturers are experimenting with Verel staple, available in 2, 3, 5 and 8 deniers per filament, at $1.10 a pound delivered east of the Mississippi River. If you'd like to work with Verel, too, get in touch with the Eastman sales department. Write or phone your nearest Eastman Sales Office.

TEXTILE DIVISION OFFICES: New York, N. Y., 260 Madison Avenue
East Providence, R. I., 888 Broadway • Greensboro, N. C., 435 Jefferson Standard Bldg.
Greenville, S. C., 1912 Augusta Road • Chicago, Ill., 360 N. Michigan Avenue

PENNSYLVANIA REPRESENTATIVE: Reading, Pa., 230 North 5th St.

WEST COAST SALES REPRESENTATIVES: *Wilson Meyer Co.*
333 Montgomery St., San Francisco, Calif. • 4800 District Blvd., Los Angeles, Calif.
821 Second Avenue, Seattle, Washington • 520 S. W. Sixth St., Portland, Oregon

EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, 260 MADISON AVENUE, NEW YORK 16, N.Y.



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*Gastonia, N. C. . . . where Dow caustic works for textile manufacturers.*

## *wherever you're producing*

## DEPENDABLE CAUSTIC SODA SUPPLY IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

Modern, geographically distributed Dow plants protect your *purchasing*. Whether from Midland, Michigan; Freeport, Texas; Pittsburg, California . . . whether 73% or 50% solution, solid, regular, ground or fine flake . . . you get caustic at its uniform, high-purity best. This constant quality protects your *processing*.

Then, too . . . Dow customers everywhere benefit from continual process research, flexible delivery network, prompt field technical service when needed. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 755E, Midland, Michigan.

*you can depend on DOW CHEMICALS*

DOW

# Your Investment Returned 100%

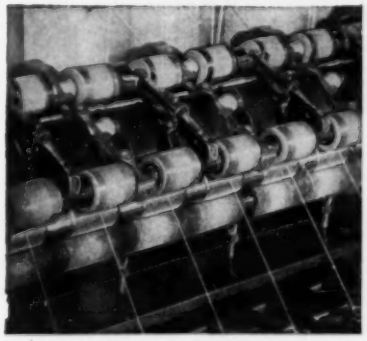
## ...IN 3½ YEARS!*

FOR BACK AND MIDDLE LINES

CLEANDRAFT NYLON-BEARING TOP ROLLS

CLIMAX BALL BEARING TOP ROLLS

**CLIMAX-CLEANDRAFT INSTALLATION**



**CLIMAX-CLEANDRAFT** Top Rolls shown above are part of an installation in continuous operation for over two years at HOOSAC MILLS, New Bedford, Mass. Hundreds of similar installations give proof positive that CLIMAX-CLEANDRAFT Top Rolls represent *an investment that pays you big dividends .... returns high yields!*

## 4½ MILLION TOP ROLLS ...and 14 YEARS of PERFORMANCE

... has provided irrefutable proof that the use of CLIMAX and CLEANDRAFT Non-Lubricating Top Rolls eliminates top roll oiling ... cuts maintenance costs ... reduces picking time in half (extends the picking cycle up to 8 times!) ... decreases yarn variation on a continuous basis. Their effective value lies in increased spinners work loads, cleaner frames, better quality and uniformity of yarn. RESULT? *Economies thus effected give you a 100% return on your investment — IN 3½ YEARS!*

*Based on confidential tests under actual mill operation

*for further information write or phone*

**PS PRODUCT SALES, INC.**

21 VERNON STREET, WHITMAN, MASS.

SALES AND SERVICE OF • CleanAlign Saddles

**Complete Service Facilities and Staff Located Strategically for Immediate Action, as Follows:—**

SERVICE SHOPS: Whitman, Mass. and Greenville, S. C.

J. H. CANADY, 3344 LeBron Avenue, Montgomery, Ala., serving Ala., Miss., Ga., La., Ark., Tex., Okla., Tenn.

GEORGE W. PARKINSON, Product Sales, Inc., 3 Hammond St., Greenville, S. C., serving So. Car.

RAYMOND L. McCAULEY, 3020 Manor Road, Charlotte, N. C., serving Virginia, No. Carolina.

FOR EUROPEAN SERVICE: VICTOR BEECROFT, 54 Boroughgate, Otley, Yorkshire, England.

Foreign Agents in The Principal Textile Centers Of The World.



For more data, write this page number on Reader-Service card. →

# The technician... among metallic yarns

*LUREX® MM*

*the special-purpose metallic yarn made with Mylar* polyester film*

***Lurex MM provides smooth-running strength in production*** . . . with great pliability, a very high yield per pound and complete elimination of stop motions.

***Heat resistance of Lurex MM in dyeing and finishing is unique.*** Permits fabrics to be dyed at the boil . . . withstands extreme heats in the heat setting operation . . . under proper controls can be piece mercerized and pre-shrunk.

***Put-ups of Lurex MM are tailored to your special needs.*** Unsupported Lurex MM is supplied on disposable spools. Supported Lurex MM is available on disposable spools, cones and tubes.

***Lurex MM offers specific advantages for increasing sales.*** With greater brilliance, strength, softness, temperature and abrasion resistance, Lurex MM opens the road to new end use possibilities.

***Lurex MM has remarkable versatility in many applications*** . . . with profitable performance records in wools, cottons, laces, embroidery and long-wearing rugs and carpets, always with the customer "plus" of easy care.

***Lurex MM is the patented metallic yarn.*** Its technical leadership is established under U. S. Patent No. 2714569.

***Consumer interest in fabrics with Lurex MM is growing rapidly.*** Spurred by coordinated merchandising, national advertising, publicity and promotion—Lurex MM is the selling factor in more and more successful fabrics.

This tag tells you it's Lurex, non-tarnishing metallic yarn made only by the Yarn Division of

***The Dobeckmun Company, Cleveland 1, Ohio***
***New York: 350 Fifth Avenue • London • Amsterdam***

Boston • Philadelphia • Charlotte, N. C. • Chicago • Detroit
Manufacturing Affiliates in Canada:
William B. Stewart & Sons Ltd., Toronto and Montreal

*Mylar is a registered duPont trademark



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NO

MORE

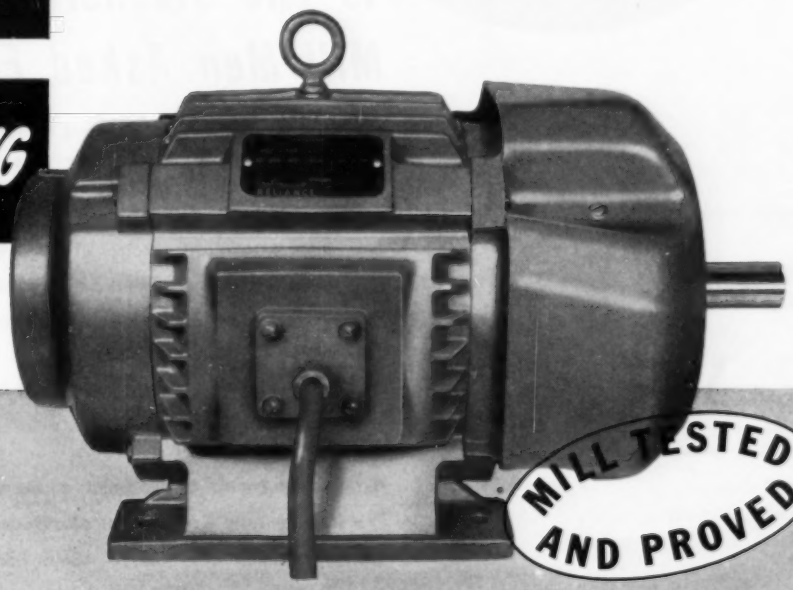
MOTOR

CLEANING

The *new* Reliance Lint-Proof Textile Motor is totally enclosed, positively eliminating lint-clogging. Lint-filled air cannot penetrate the sealed motor housing, and the high velocity cooling fan blasts lint off the outside of the motor.

It will pay you to try these new textile motors and see how they cut operating costs by eliminating motor cleaning.

*Now available—1-20 hp. general purpose, air-cooled textile motor for application on spinning, roving, drawing, and twisting frames . . . and on cards, openers, pickers, and other textile machines.* B-1508



MILL TESTED AND PROVED

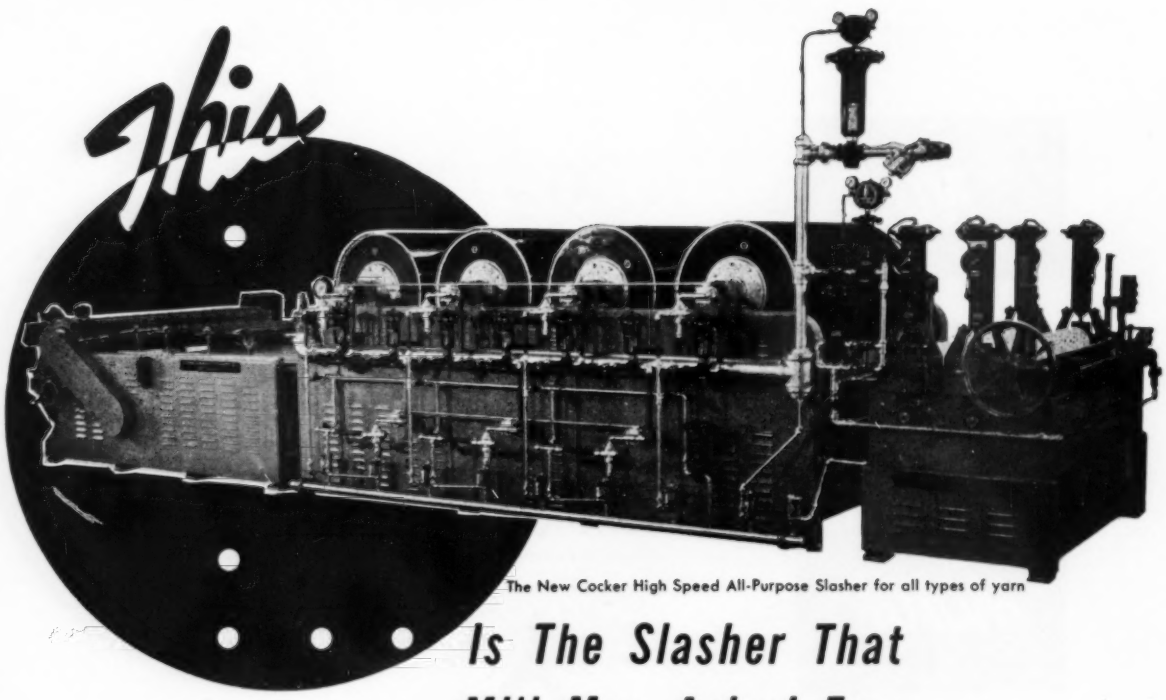
# IT'S LINT-PROOF

RELIANCE Totally-Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

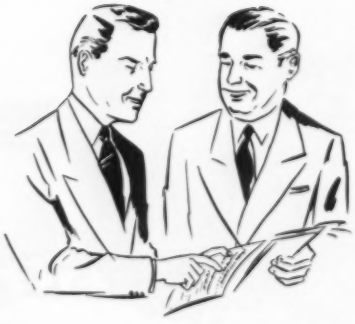
*Canadian Division: Welland, Ontario*




The New Cocker High Speed All-Purpose Slasher for all types of yarn

# Is The Slasher That Mill Men Asked For

Hundreds of mill men told us what features they wanted in a new slasher. Cocker engineers, backed by twenty years of study and experience, have incorporated these features in the New Cocker All-Purpose Slasher.



Some of the many advantages of this new Cocker Slasher are:

1. Air operated carrier and delivery rolls.
2. Air operated ironing compressor roll with finger-tip variable pressure control.
3. A fast and simple latch release for beam doffing, requiring no change of position of beam carriage.
4. Self locking split rod holders.
5. Tension control at two points on the head end.

The stainless steel size box has also been greatly improved.

Cocker Slashers are built to ASME Code Construction in both 15 and 35 PSI.

Former Cocker Slasher models were already acknowledged to be the most efficient, economical, and versatile slashers on the market. This new Cocker Slasher is truly the Slasher of Tomorrow. Get full information on it today.

*New England and Canadian Representatives:*
**J. S. Fallow & Co., 279 Union St., New Bedford, Mass.**
**1215 Greene Ave., Montreal 6, Canada**

*Visit Cocker's Booths Nos. 830 and 831, Southern Textile Exhibition*

THE LEADER
COCKER
AROUND THE WORLD

**Machine and Foundry Co., Gastonia, N. C.**

**WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT**



← For more data, write this page number on Reader-Service card.

These famous words from the poet Campbell might well have been written with the present conditions of the hosiery industry in mind. Increasing **seamless** sales have been casting ever stronger shadows across the sales curve of full-fashioned hosiery.

Increased production facilities at Fidelity are aimed to help hosiery manufacturers take full advantage of the tremendous market potential for **seamless**. Forward-looking manufacturers know that the electronically controlled "400" produces the finest quality **seam-free** stockings possible—at the push of a button!

Are you prepared for coming events in the hosiery industry? You can be—sooner than you think.

*Designers and Builders of Intricate, Automatic Precision Machines*

SINCE 1911

**FIDELITY MACHINE COMPANY, INC.**

**3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.**

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N. Y.

SOUTHERN SALES OFFICE: 607 PROVIDENT BUILDING, CHATTANOOGA, TENNESSEE



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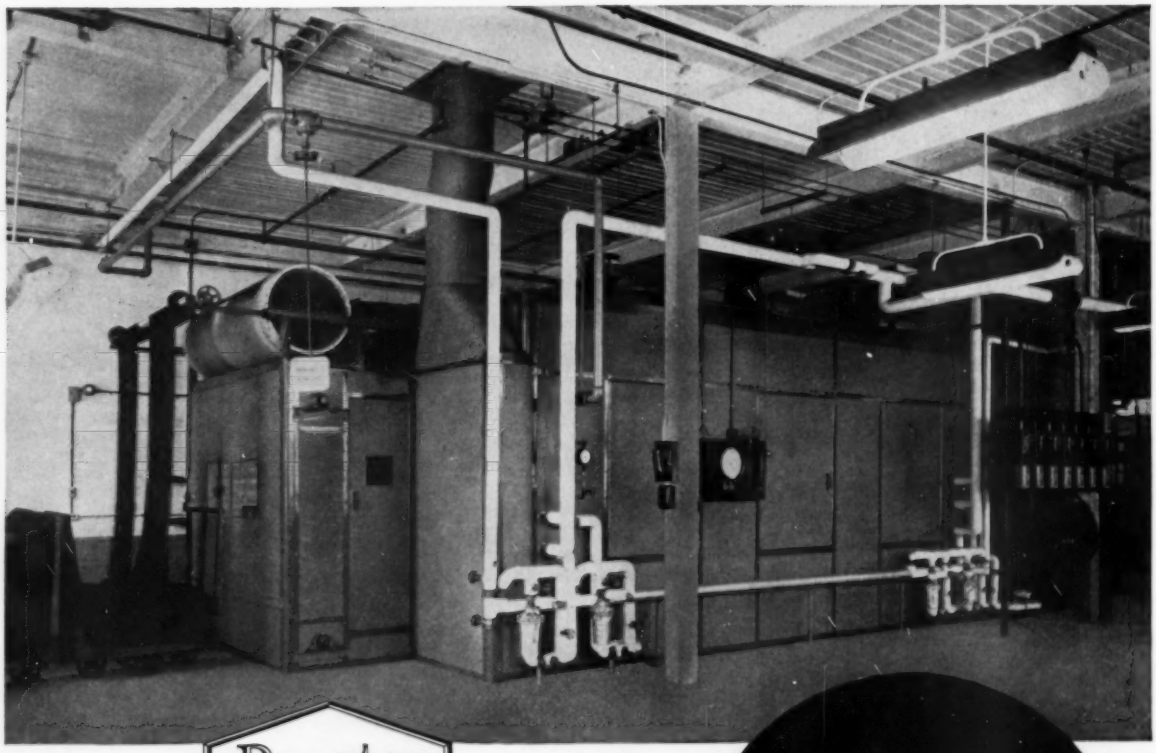
# CURE TEXTILE FABRICS AT A PROFIT!



*Installation view of Proctor Loop Curer*

THE Proctor

## LOOP CURER and ROLLER CURER

These rugged, high-capacity machines feature the latest design and construction improvements—all geared to increase your profits. Units can be combined with existing equipment to meet your exact requirements. For fabrics that will not handle properly in loop, the roller curer is recommended. Recent developments for this machine also include improved air distribution, flexibility in holding capacity, and no-stretch operation. These machines are the result of long experience in supplying machinery to the textile industry. For the complete story of the profit-making opportunities offered by Proctor, write today for latest information bulletins.

- GREATEST CURING UNIFORMITY
- IMPROVED DESIGN
- MAXIMUM CAPACITY WITH MINIMUM POWER REQUIREMENTS
- FLEXIBILITY OF OPERATION
- SIMPLIFIED INSTALLATION

**PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD**

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "REDMANIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor **PROCTOR & SCHWARTZ, INC.** Philadelphia 20, Pa. Manufacturers of Textile Machinery & Industrial Drying Equipment.



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# Star studded with economy features

# New Cutler-Hammer Three-Star Unitrol

**Standardized Modular Construction**

All control units are 20" wide and in multiples of 14" in height. This permits easy interchange of various sizes and types of control units without rearrangement of the entire control assembly and avoids wasting space with dead panels to adapt non-uniform control units. This standardized modular construction also insures good appearance at all times because horizontal lines match.

***No industrial today can afford to ignore the savings Unitrol now offers in the installation and use of motor control***

The new Cutler-Hammer Unitrol cuts costs from the moment it is delivered. It can save days, often weeks, in the time required for the installation of motor control. The high cost of mounting and wiring individual starters is eliminated. Earlier use of the production facilities brings a speedier return on the investment. Unitrol often effects vital savings in floor space, sometimes avoids the need for costly plant construction.

In performance, nothing can compare with the new Unitrol. Feature after feature of the astounding new Three-Star Control saves time and expense. Superlife vertical contacts *never* require maintenance care in all normal use. Adjustable overload relay coils let motors work harder safely, save the expense of both damaged motors and needless production interruptions. Full three-phase protection such as able engineers now demand is offered by three-coil overload relays.

Compare the new Unitrol with any other control centers and see the difference. See how sizes and types of control units can be interchanged in Unitrol without rearrangement of the entire assembly or the waste of space with dead panels. Saves time, saves space, saves money. Compare and you *too* will insist on Cutler-Hammer Three-Star Unitrol. Write or wire *now* for full information. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER

★ ★ ★

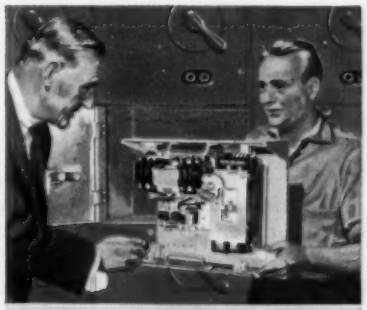
UNITROL

C-H

Unitrol plug-in feature disconnects control from power when unit is moved to test position, reconnects without misalignment when unit returns to operating position. Control panel is *always* vertical. Plug-in design permits back-to-back assemblies without staggering control units. Units are removed by merely disconnecting load and control wiring at terminal boards. This wiring is cabled, marked and color coded.

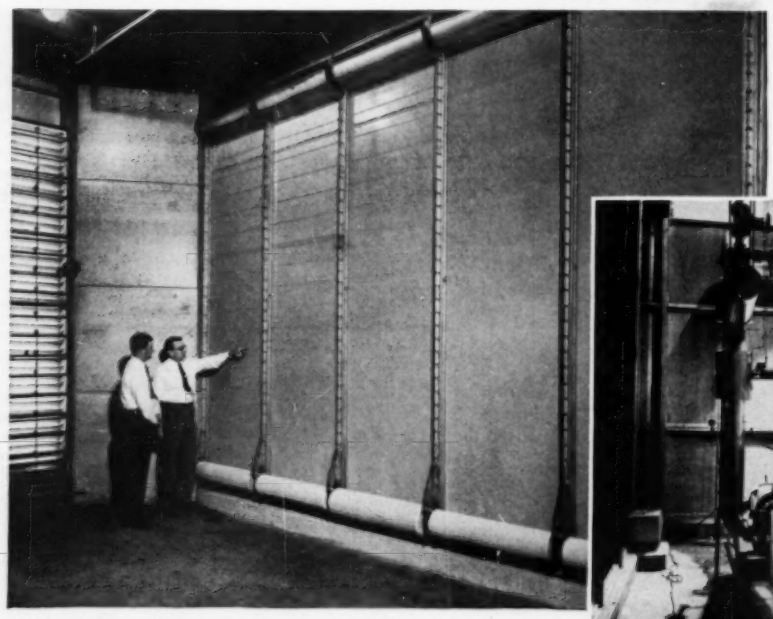
Unitrol provides either circuit breakers or fused disconnect switches of advanced design. Both have three-position, self-aligning operators arranged for padlocking with as many as three locks in the "off" position. Recessed pushbuttons and concealed door hinges are typical features that add to safety and fine appearance.

*The name UNITROL is a Cutler-Hammer trade mark*



Components front of panel mounted without stacking. No crowding, no power connections near panel fasteners. Many Three-Star Control exclusives. Superlife vertical contacts *never* require maintenance expense in all normal control uses. Adjustable overload relay coils let motors work harder with safety. Full Three-Phase Protection with 3-Coil overload relays on standard size starter panels.

# GREENWOOD MILLS Takes LINT *Out of Circulation*



**LINT STOPS HERE.** A typical AUTO-AIRMAT installation at Greenwood Mills' new Durst plant. It's one of eleven providing complete lint protection for the plant's air conditioning system installed by Carrier Corporation.

**BEHIND THE SCENES.** A view of the air washers, protected by AUTO-AIRMAT installation pictured. Note extreme cleanliness of washers and absence of any trace of lint.

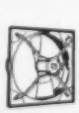
## Auto-AIRMAT filters supply 1,320,000 cfm of clean air to Durst plant at Greenwood, S.C.

A plant producing a million yards of cotton cloth per week stirs up plenty of lint—lint that could easily "gum up" air conditioning systems and add many costly hours of overtime maintenance. But lint was "voted out" at the planning stage of Greenwood Mills' new Durst plant. Complete lint protection was built-in.

All eleven air conditioning systems (totalling 1,320,000 cfm) installed by Carrier Corporation's Atlanta office were equipped with AAF AUTO-AIRMAT filters. These automatic, self-cleaning filters protect the air washers by cleaning both outside intake air and the re-circulated air to carding, spinning, weaving and cloth rooms.

The AUTO-AIRMAT is the *only* filter that removes lint fibers from the air and cleans itself automatically! The Airmat media, installed in roll form at top of unit, becomes a moving filter curtain that is re-rolled at bottom with its lint load. Curtain movement is entirely automatic, with clean media being introduced only in sufficient quantity to keep resistance at proper level. And the lint is wrapped up in the roll for easy disposal! For complete information, call your local AAF representative or write direct for Bulletin 234.

Herman Nelson Unit Blowers



Herman Nelson Propeller Fans

**American Air Filter** COMPANY, INC.
304 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

BETTER AIR IS OUR BUSINESS

Illinois Steam Heating Specialties

Air Filters and Precipitators



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*DK-149 Press Roll Covering comes in handy ribbon form for quick, easy application to the roll.*

## REDUCE FABRIC CREASING . . . with Armstrong DK-149 Press Roll Covering

To minimize fabric creasing, many mills today are switching to a new type of loom press roll covering—Armstrong DK-149. This new covering has a high friction surface that won't let the cloth slip or run unevenly. It maintains firm, even take-up tension, thus eliminating a common cause of creasing.

DK-149 gives this unusual performance because it's made of sponged rubber reinforced with springy cork particles. This resilient material won't pack down or develop high spots. On many looms, DK-149 has run for as long as two years, maintaining good fabric control all the while.

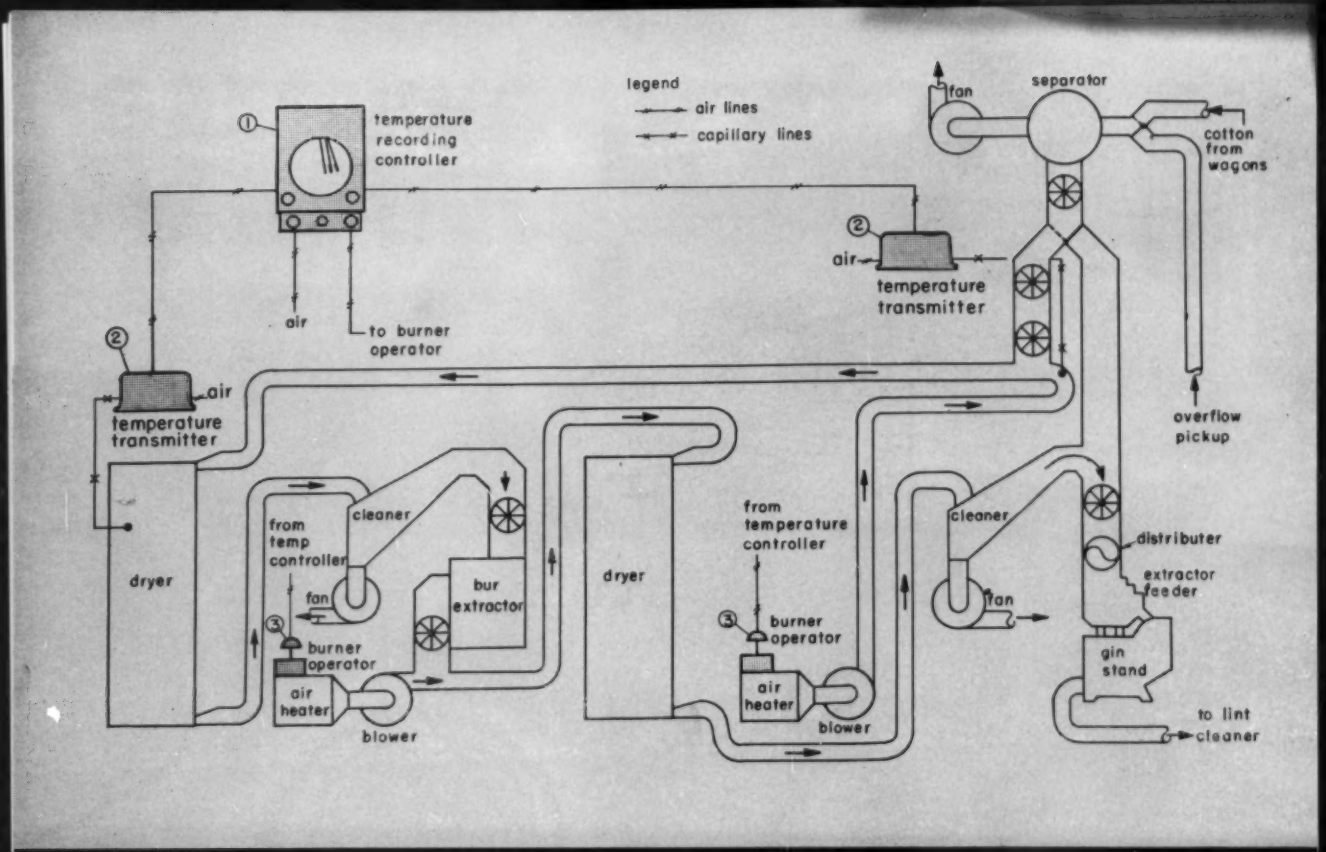
Another important feature: DK-149's high friction surface is finely textured. It won't leave marks or indentations of any kind on the goods. Ask your Armstrong man for samples of this new press roll covering. Then give it a full test on your own looms.

For more information about DK-149 and other Armstrong weave room items, send for the new folder, "Armstrong Loom Supplies." Address Armstrong Cork Company, Industrial Division, 6907 Dauphin St., Lancaster, Pennsylvania.

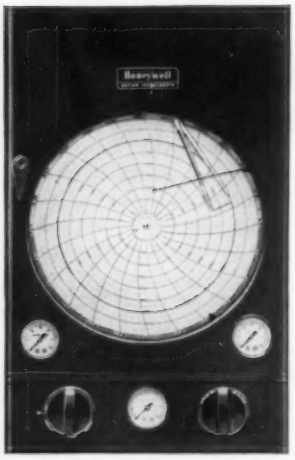
**Armstrong LOOM SUPPLIES**

*. . . used wherever performance counts*

LOOM CLUTCH DISCS AND INSERTS • TAKE-UP ROLL COVERINGS • LOOM BRAKE AND LET-OFF STRIPS • TEMPLE ROLL COVERINGS

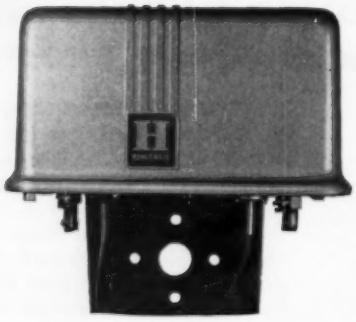



## Industry-proved Instrumentation for moisture control



**Temperature controllers**

(Fig. 1 in diagram) give flexible pneumatic control to actuate a diaphragm-motor type of final control device. Bypass panel lets the operator take over on manual control instantaneously. Can be located anywhere in the mill.



***Tel-O-Set* transmitter**

(Fig. 2 in diagram) detects temperature at the dryer, relays a pneumatic signal to the control instrument. Simple, rugged construction features easy calibration and range changing in the field. Located near point of measurement.

***Air-O-Motor* operators**

(Fig. 3 in diagram) move dampers, louvres or valves in response to control signals from the instrument. Mounted near burner.

# For better ginning...

# control your

# cotton moisture

## *with Honeywell instrumentation*

MOISTURE CONTENT of raw cotton makes a big difference in efficiency of ginning and cleaning. And in the quality of cotton fiber, too.

When cotton is too wet, it's difficult to clean. Dirt and foreign matter stick to it. Wet cotton gets matted on ginning blades . . . interferes with ginning . . . often causes shutdowns for cleaning.

Overdried cotton, on the other hand, becomes so brittle that it's hard to handle in spinning and weaving. It won't take dyes properly. Dried foreign matter breaks up into small fragments that can't be readily removed.

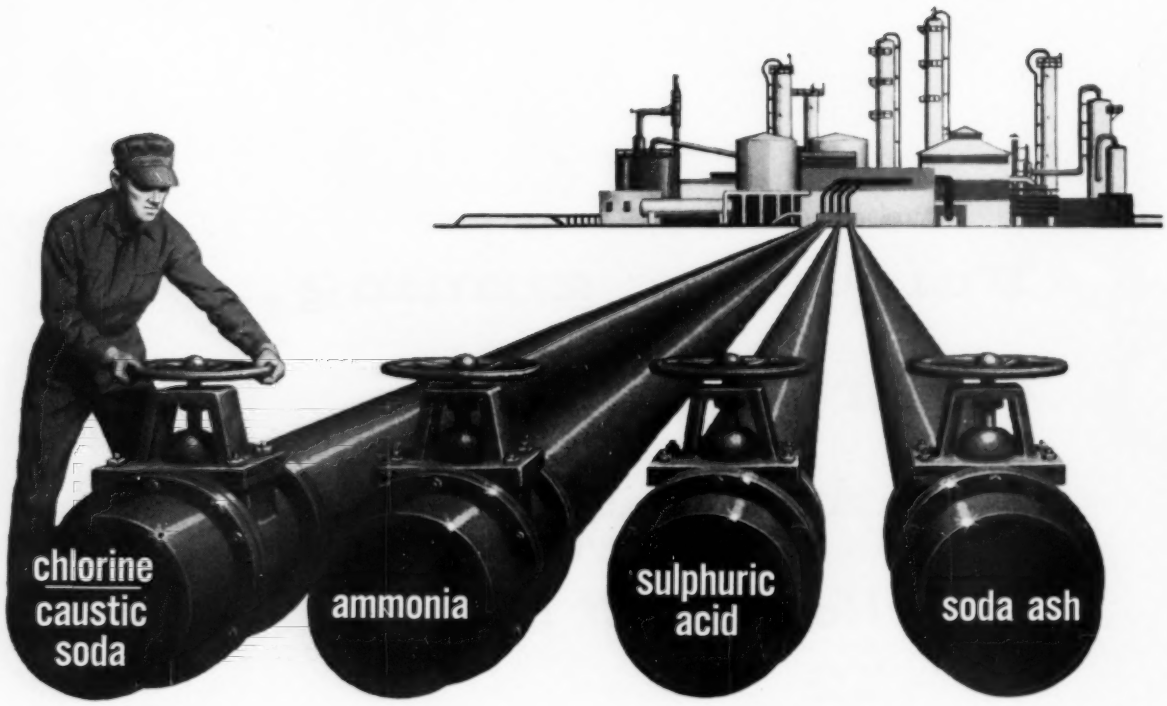
With Honeywell instrumentation you can feed your ginning process cotton of just the right moisture content. Heat input to the air heaters is automatically controlled to compensate for variations in the moisture content of cotton from the fields.

A staff of Honeywell textile process control specialists will design a system to match the requirements of your ginning equipment. The instruments used are standard Honeywell products now at work in thousands of textile mills all over the world.

Investigate Honeywell control *now* . . . before the ginning season starts. Your local Honeywell sales engineer will be glad to give complete facts, and to arrange for installation in time to put it to work in this year's production. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

MINNEAPOLIS
**Honeywell**
BROWN INSTRUMENTS
*First in Controls*




# you can be on our "pipe line"

Want to smooth out your chemical supply problems? Tap into the Olin Mathieson "pipe lines." You'll see what our multi-plant production facilities can mean to you.

The effect of a number of producing points is to balance out local shortages and surpluses. In one instance, a serious chlorine shortage on the Gulf of Mexico was relieved by an excess in Canada. Each of the five plants between shipped into the next plant supply area to the South, setting up a chain reaction which released the needed tonnage on the Gulf.

Our combination of multi-plant facilities and an imaginative approach to the logistics of the chemical industry can prove invaluable to you. Discuss it now with an Olin Mathieson representative or write the Chemicals Executive Office in Baltimore.

MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION · BALTIMORE 3, MD.

4128

INORGANIC CHEMICALS: Ammonia · Bicarbonate of Soda · Carbon Dioxide · Caustic Potash · Caustic Soda · Chlorine · Hydrazine and Derivatives · Hypochlorite Products · Muriatic Acid · Nitrate of Soda · Nitric Acid · Soda Ash · Sodium Chlorite Products · Sulphate of Alumina · Sulphur (Processed) · Sulphuric Acid
ORGANIC CHEMICALS: Ethylene Oxide · Ethylene Glycols · Polyethylene Glycols · Glycol Ether Solvents · Ethylene Dichloride · Dichloroethylether · Formaldehyde Methanol · Sodium Methylate · Hexamine · Ethylene Diamine · Polyamines · Ethanolamines · Trichlorobenzene · Polychlorobenzene · Trichlorophenol



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Century

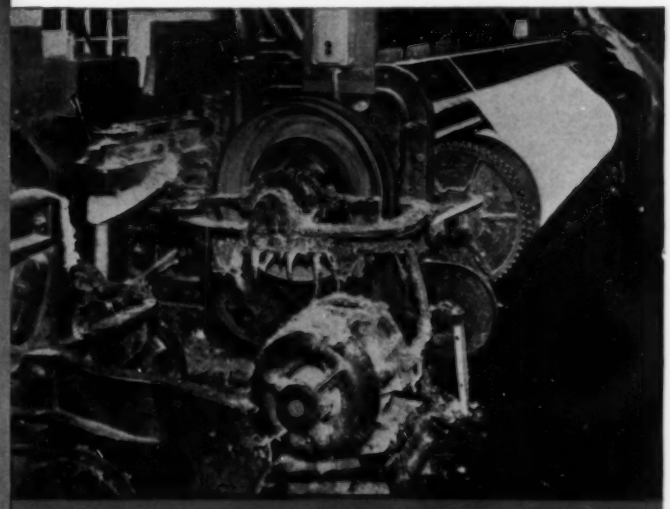
Performance-Rated°

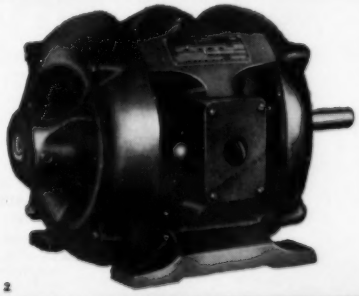
# TEXTILE MOTOR

# Clears itself of clogging lint!

## for dependable service on this big 120" loom

- Big, wide, obstruction-free ventilating passages let lint flow through. Strong-blasting integral cast aluminum rotor fans keep vital parts lint-free
- The clean, cool ventilation of Century Performance-Rated Textile Motors means extended insulation life... deliver more dependable operating hours in your plant
- You'll find a Performance-Rated Century Motor to fit your job in Century's broad and varied line. Ask for Textile bulletin 14-193, page 1. Other bulletins available on AC or DC Motors... ⅛ to 400 H.P.—Drip Proof, Splash Proof, Dust Proof, Explosion Proof





*For full information,* contact your nearby Century District Sales Office or Distributor.

Offices and Stock Points in Principal Cities

Performance-Rated°
1/8 to 400 H. P.

**CENTURY ELECTRIC COMPANY**

1806 PINE STREET • ST. LOUIS 3, MISSOURI



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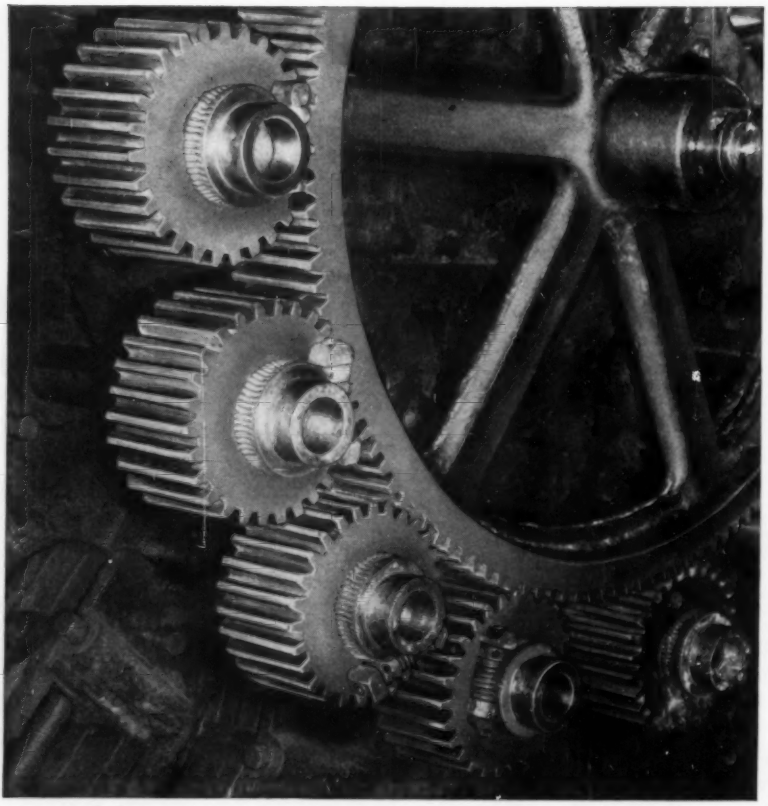
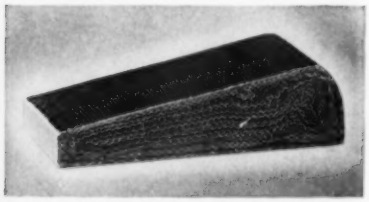


**REDUCE WEAR** on large metal gears and reduce noise in textile printing machines with the use of C-D-F Celoron plastic gears. Prior to this use of Celoron, metal gears had to be replaced after one to two months' operations. Since installing nine C-D-F Celoron gears over a year ago, there has been no wear on the main gear, no replacement of the C-D-F Celoron gears.

**ELIMINATE CORROSION,** resist wear with C-D-F Celoron pot-eyes for bleachery applications. This low-cost molded product is extremely smooth and strong, has excellent resistance to high heat, moisture, abrasion.



**INCREASE MACHINE EFFICIENCY** with special C-D-F loom parts. This C-D-F parallel plug has high impact strength, is impervious to oil and water. It does not fracture, chip, delaminate. Two years' life is common.

**SAVE MATERIALS** with superior C-D-F Roving Cans. For running synthetics, C-D-F makes a rolled fibre rim that eliminates static charge. No chance of snagging or injuring materials. New 15" diameter Diamond Fibre cans are now available!

# LOWER mill operating COSTS by wider use of C-D-F plastics

Reduce wear and noise, eliminate corrosion, increase machine efficiency, save materials. That's what these four examples of C-D-F plastics can do for your mill. C-D-F is a leading manufacturer of vulcanized fibre, the long-life material that goes into Diamond Fibre Roving Cans which are famous for quality and their seamless uniformity. C-D-F has years of experience in selling the textile industry, has established its southern headquarters in Spartanburg, S. C. Reasonable prices, superior quality, fast service are part of every order placed with the friendly C-D-F textile sales engineer. If lowering mill operating costs is your responsibility, C-D-F . . . a big reliable source of supply . . . helps you with a complete line of textile industry plastics.

## C-D-F MAKES

**BARRELS**
**BEARINGS**—cloth roll, jig
**BOARDS**—examining
**BOBBINS**
**BLADES**—separator
**BOXES**—battery filling
bobbin
conditioning
doff
mill
quill
spooler
tote
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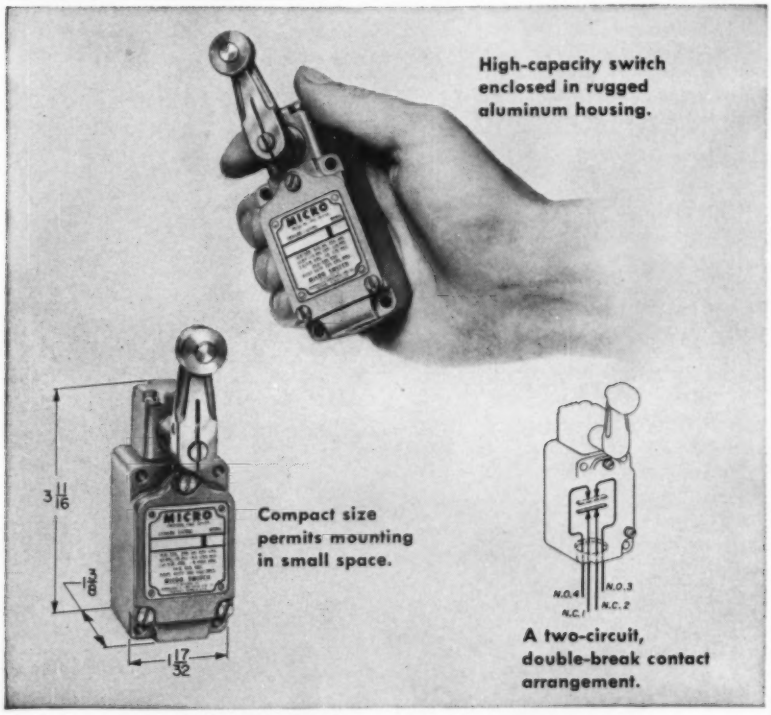


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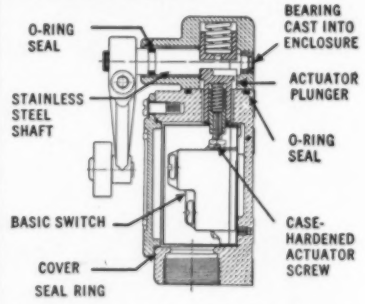


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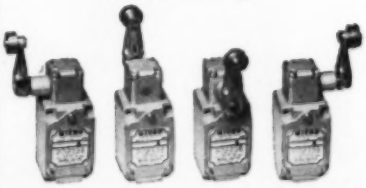

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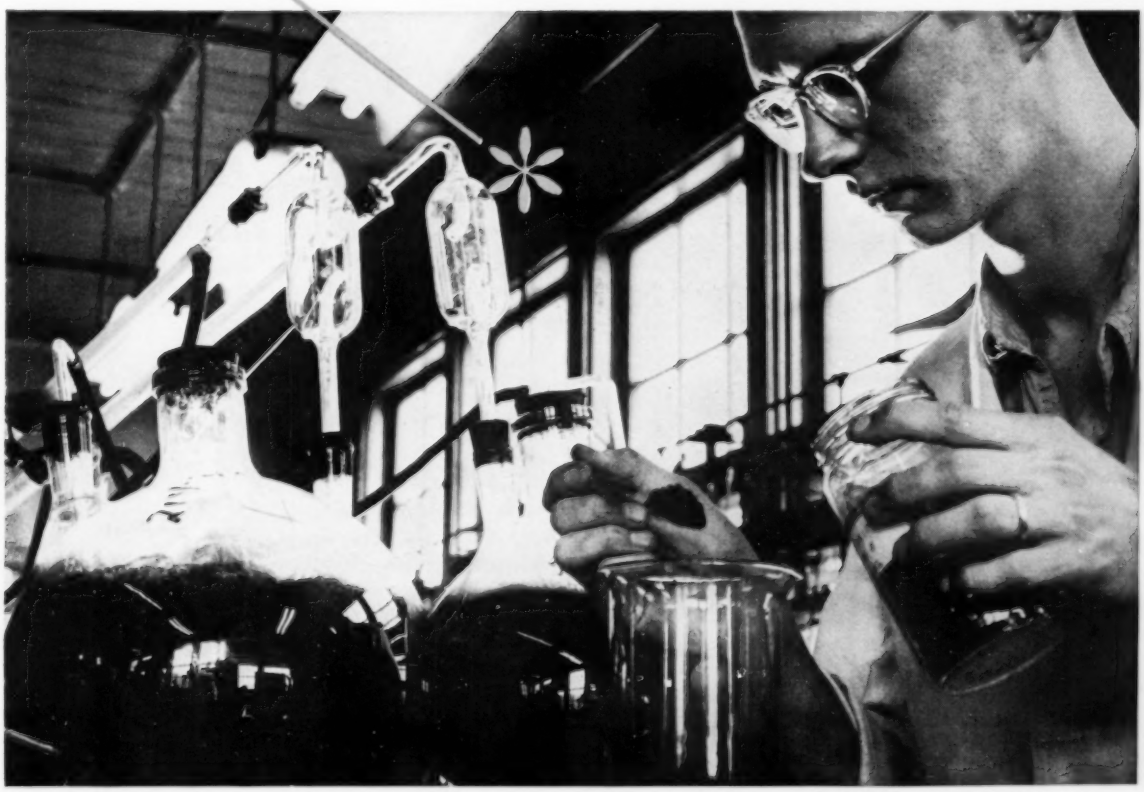



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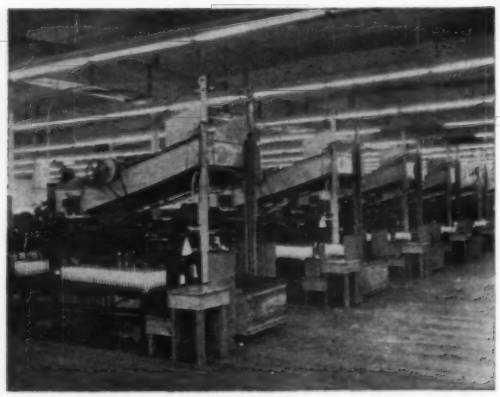

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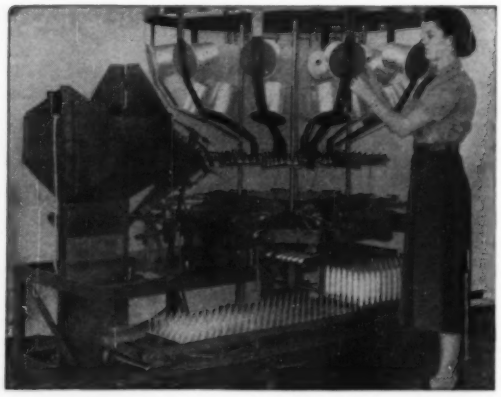

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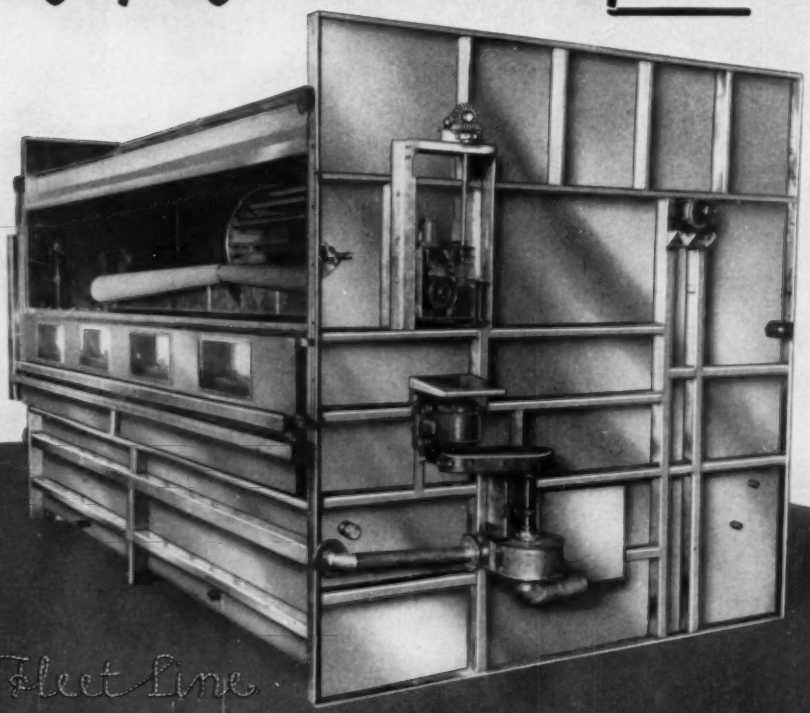

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| 310 | 25 | 20 | | Higher Temperature |
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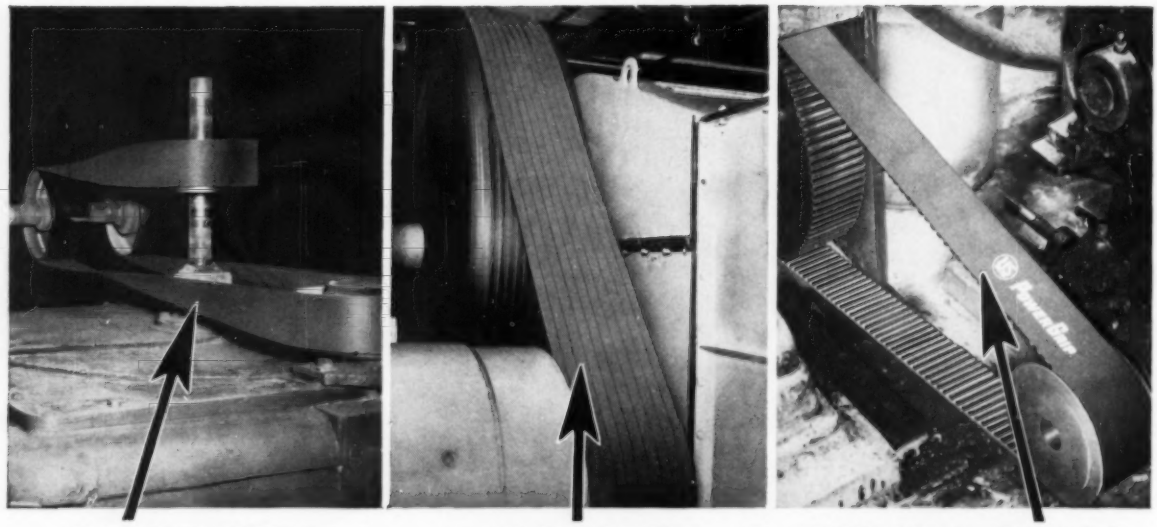


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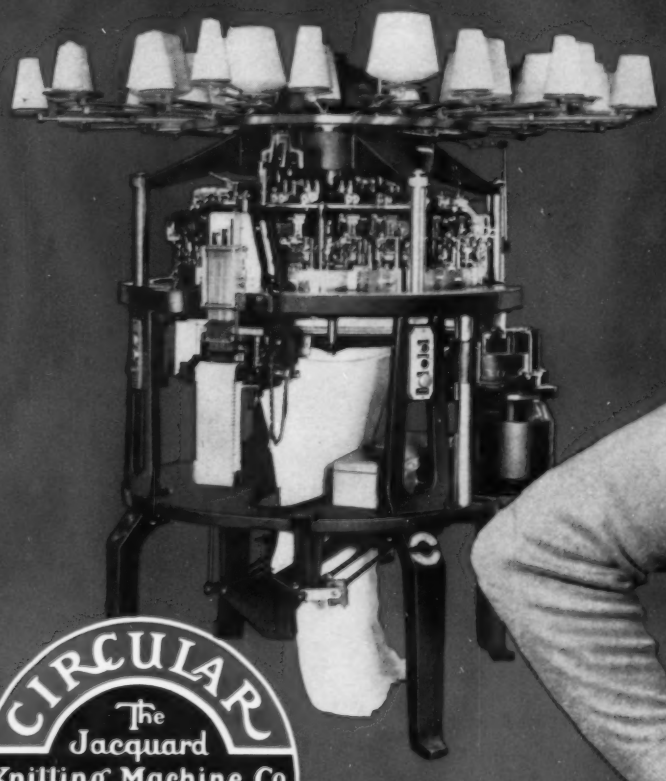

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The LONG-RANGE VIEW

# What Causes Supervisors To Crack Up?

On p. 79 is an article on human danger points. The gist of that article is that human failure—or more correctly, human crack-ups under stress—may not be the fault of the unfortunate individual at all. The fault may lie with the job, or again more correctly, with the people who set up the job.

In late years, much has been said about supervisors knowing their workers and being alert to conditions outside the job that put an individual under stress. We are glad to publish this article to call attention to the fact that you—the overseer, superintendent, manager, industrial engineer, anyone responsible for a given job setup—may inadvertently be a greater stress creator than conditions outside the job.

### What Fans the Fear?

Failure in the sense of crack-up or in the sense of a more minor breakdown of human relations is very often attributed to fear [see TEXTILE WORLD, May, '56, p. 87]. We agree that in some way or other fear usually is at the bottom of these troubles. But what creates such a fearful situation that an individual cracks up or otherwise registers a vehement protest?

To take a few dramatic examples:

We know of a few instances in mills where two workers engaged in a fist fight. We know of instances where a worker hit a second hand or an overseer. And we know of cases where a second hand or overseer hit a worker.

Everyone expects grown men working for a living to be more mature than to engage in such a method of protest. But it happens. Why? What could goad an individual's fear to that extent?

In some of these cases where we know the details, we are convinced that something in the job itself, in the job setup, or in the individual's treatment on the job fanned his fear to the point of crack-up. Nearly always, the fault lies with the individual's superiors. Impossible conditions have been imposed on the individual.

### Why Such Conditions?

It would be childish to suppose that managers, superintendents, overseers, or anyone else in authority deliberately create situations fearful to individuals under them. There is nothing intentional about it. In all sincerity, these men adopt situations that promise the best rewards in production and a satisfied, efficient work force.

Therefore it is easy to assume that a crack-up or other protest is entirely the fault of the individual, particularly when other individuals accept the circumstances without protest.

The joker is that the circumstances are seldom the same. The physical setup may or may not be the same; but such factors as seniority, experience, competition, etc. very often—nearly always—make the circumstances different.

### Head Off Trouble

As the article on p. 79 points out, human danger spots can often be eliminated if a little thought is given the problem. In the normal mill organization, far more trouble results from a crack-up or other protest by a supervisor than by a worker. The higher the supervisor's level, the more trouble caused.

It follows that in your search for human danger points in your own organization, the best and most-rewarding place to begin is your own assistants; that is, the supervisors immediately under you. It is a sad thing to see anybody goaded into a crack-up. For a mill organization, it is doubly sad to see it happen to a man in a key position.

O. M. Thomas

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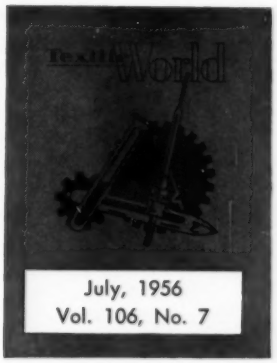



## To Avoid Trouble—

# Study Your Jobs To Spot HUMAN DANGER Points

- A human "crack-up" may occur in any mill any day—and minor ones, perhaps no more than a flare of anger, occur in nearly every mill every day.
- To an alert supervisor, these instances should serve as warnings. People don't crack up for the fun of it. A close check on the job pressure may show that the fault lies in the job or the circumstances—not in the worker.

By **AUREN URIS,** Research Institute of America

WHEN a fuse blows on an electrical circuit, you generally accept it as a matter of course. "Overloaded," you say ruefully, and go about replacing the fuse.

But let the same thing happen with a human being, and the reaction can be startlingly different. The employee who gives way under pressure may be the target of everything from a mild rebuke to a full-dress bawling out.

When an individual fails in the pinch, it may not be the fault of the individual at all, Dr. R. Conrad, of the Applied Psychology Research Unit at England's University of Cambridge, thinks.

### What Causes Failure?

Briefly, Dr. Conrad's belief is that plane and train crack-ups blamed on "human failure" may be due to the fact that too heavy a responsibility was placed on the individual. Events can pile up so rapidly that "the abilities required to deal with them may be far in excess of the limits of the human capacity."

Obviously, Dr. Conrad's finding applies to fields other than safety. Many a work procedure, for example, requires a course of emergency action that would be humanly impossible to carry out. Yet, the employee is expected to "follow orders" regardless.

Supervisors run into trouble because of their failure to realize the human danger point in a given work situation. And it's called to their attention, in many cases, only because of a serious error or failure that may result in the loss of costly materials or the loss of a worker who either quits or has committed an act for which he must be discharged.

By that time, of course, the damage is done; the only thing that remains is to pick up the pieces.

### Eliminate Danger Points

Is it possible to give the "human element" a fair break? It certainly is. And you'll save yourself a great deal of grief in the bargain.

Here are some guides that can help you avoid overloading the "human element" in safety and work procedures:

### 1. Remember the difference between people

As far back as Adam and Eve, people have been different. Individuals differ, in some cases very widely, in their abilities and in their capacity to stand up under pressure.

In addition to the differences resulting from the personalities of individuals, age and experience also play a part in determining what a person can and can't withstand. An old-timer, for example, may be able to handle a number of simultaneous steps that would have a youngster throwing up his hands in despair.

For example, in one cotton opener room where fires occurred occasionally in the machines, the operators were supposed to—

1. Stop the opening line
2. Push a buzzer alarm
3. Get all the cotton and fly waste out of the machine
4. Get a hand fire extinguisher and play it on the burning cotton
5. Use a fire bucket or hose if necessary

Veteran opener-room men could go through these steps in a matter of seconds. New operators, however, under the pressures of the moment often were not calm enough to detect the fire and complete the procedure in time to limit the fire to a minimum of opening machines or even prevent its being carried through the trunkline to the picker room.

The moral, of course, is not to excuse new employees from necessary procedures. The point is, make procedures practical and give the new man repeated training until the emergency steps are mastered. Confidence that he knows what to do and exactly how to do it will avoid sudden overload on the individual when his responsibility is momentarily multiplied.

### 2. Instruct in simple words

The simpler your instructions, the easier your employees will be able to grasp them.

One supervisor helped make his instructions to his employees easier by spelling them out in numbered steps like this:

"If you have an unfinished load of work 10 mins. before quitting time, (1) notify me; (2) have everything needed to do the work ready and at hand; (3) check the unfinished part of the work with the employee from the next shift."

You can simplify your instructions in a number of ways. One syllable words, of course, help. A means to insure quick understanding is to number or letter the successive steps. This method always makes the steps easier to remember. Another device sometimes used to good advantage is the use of colors or symbols to give your instructions. Here's an example:

"Whenever you get a mixed lot of work, always do the sub-lots marked with triangles first, those marked with a circle second, and those marked with a square third."

If your symbols have a specific meaning, explain these meanings to your people to insure their understanding what you want done.

### 3. Put it in black and white

When your instructions are written, there is less likely to be a question or argument as to who is supposed to do what. If you post these instructions at the point where the action is likely to take place, you again diminish the possibility that an employee will get himself into a tight spot.

In a shipping department, for example, the department head has posted the priority he wants assigned in case a jam-up occurs. This practice has a double value. First of all, employees have on hand information they may need in a work crisis. In addition, it becomes possible for the supervisor to leave the department without feeling that a crisis may shut the department down in his absence.

### 4. Anticipate trouble

Check over your work procedures. Ask yourself when and where your people are most likely to run into pile-ups that might give an employee more to handle than his capacity.

Your workers can be particularly helpful in checking the possibilities. After all, the average employee knows his job in even greater detail than his supervisor does.

Getting their ideas as to the point in the work where they might run into trouble is frequently the best trouble-spotting procedure.

In checking work procedures or in setting up jobloads, even in mills where jobs are set by timestudy, keep the human danger point constantly in mind. Sometimes the work method that yields the greatest efficiency may not be desirable because of its potential overloading through physical fatigue or emotional strain.

For example, doffing spinning frames. Since doffing is a costly job and requires skill, greatest efficiency might be obtained by breaking the over-all job into tasks and assigning them so that doffers do nothing but stop the frame, take off full bobbins of yarn, put on empty bobbins, and start up the frame. All associated tasks—cleaning under the frame, getting empty bobbins and boxes, pushing out full boxes, etc.—might be assigned to less-skilled, less-expensive workers.

However, doffing is a strenuous job. Its fatigue element is high. And the sheer repetitiveness of doffing without breaks could easily lead to emotional reaction.

In a case like this, it would be pushing a worker toward a crack-up to narrow his job to such a strenuous, repetitive task.

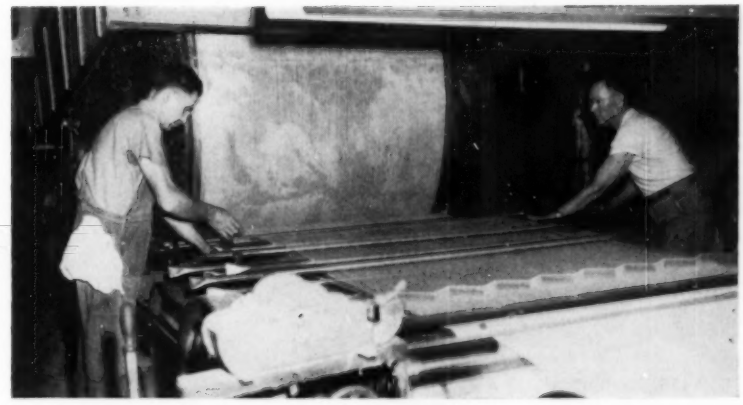
### Checklist for Danger Spots

The following brief checklist may help you anticipate some common points of overload.

1. Are there any procedures where an employee is working in isolation and might run into trouble because no one is around to give him a hand?
2. Do you have any procedures where timing is critical and an interruption might make it difficult for the employee to accomplish the necessary steps in a given time?
3. Are there any safety hazards that would make it difficult for an employee to protect himself if the accident actually takes place? (In the drug room or laboratory of a finishing plant, for example, neutralizing reagents are provided in case of accidental exposure to harmful chemicals. But if the reagent shelf is inconveniently located, the harm may be done before the employee can reach the neutralizer.)
4. Are there times of the day or week when employees are pushed to hectic activity in order to cope with job requirements? (Change of shifts, change of stock, payroll day, clean-up day, etc. are instances where supervisors or workers often bog down.)
5. Do you have any occasional assignments that unduly complicate a man's regular work? (In one department, for example, it was the assigned duty of one of the old-timers to take visitors on a tour of the department. Although this assignment took only about 15 mins., it represented a serious interruption of the man's regular work.)

Don't overlook the fact that your own activities are also susceptible to the danger of overload.

You may find yourself in the situation where you have too much to do. At those times, accept Dr. Conrad's finding that there is a limit to how much you can handle at any one time. See if you can delegate or reschedule so that you don't overload your own "emergency circuit."



LEASE STRINGS are placed in the yarn on the slashers every time a beam is doffed. The 41s warp yarn is slashed at the rate of 60 yds. per min.

HYDRAULIC TRUCK is used in doffing the 24-in. warp-yarn beams from the slasher. Each beam holds about 3,000 yds. of sized warp yarn.

# How Julia Cade Mills Weaves 80-SQUARE Print Cloth

- Only two yarn numbers are used by Julia Cade Mills, Albertville, Ala., to keep its 616 looms going. Loom production is in two weights of print cloth.
- Here's how the mill does it—

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

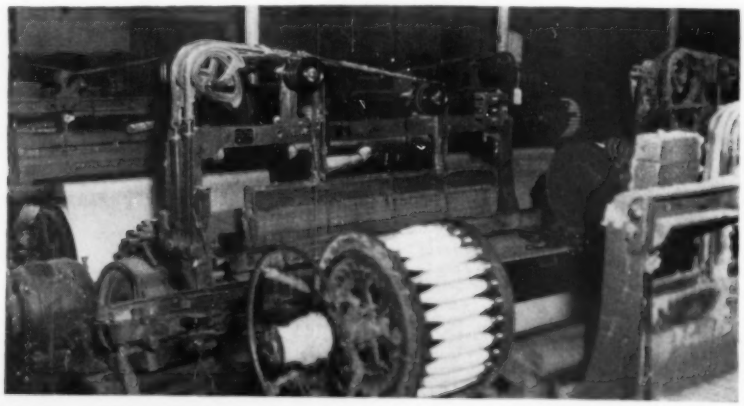
Julia Cade Mills produces approximately 325,000 yds. of cotton print cloth per week. About half the total production is on standard 40-in., 80x80, 4-yds.-per-lb. fabric; and except for a few looms on miscellaneous fabrics, the balance of the looms are weaving 45-in., 60x48 prints, 5.35 yds. per lb.

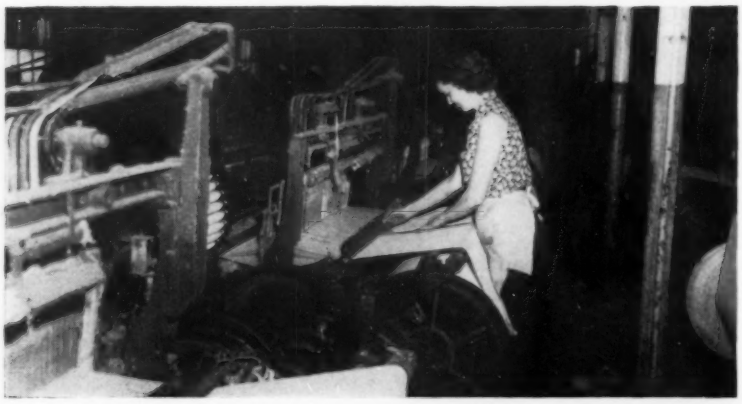
The mill was established in 1928 and is housed in a single-unit, one-floor building. The weaving department has an automatically controlled air-changing and humidity system that maintains a temperature of about 80° F. and a relative humidity of about 84%.

Of the 616 looms in the mill, 555 are Draper Model E 44-in. looms, operating at 162 ppm.; 52 are Draper 40-in. E Looms, rebuilt by Bahan, that operate at 175 ppm.; and 9 are Hunt 46-in. looms.

Yarn used in all fabrics is 41s warp and 23s filling. The looms have 24-in. yarn beams, and the quills are 8 ins. Weaving efficiency is over 93%, and

THE LOOMS are Draper E models, although some have been rebuilt by Bahan. Each loom-fixer has 103 looms on his section to repair and maintain.

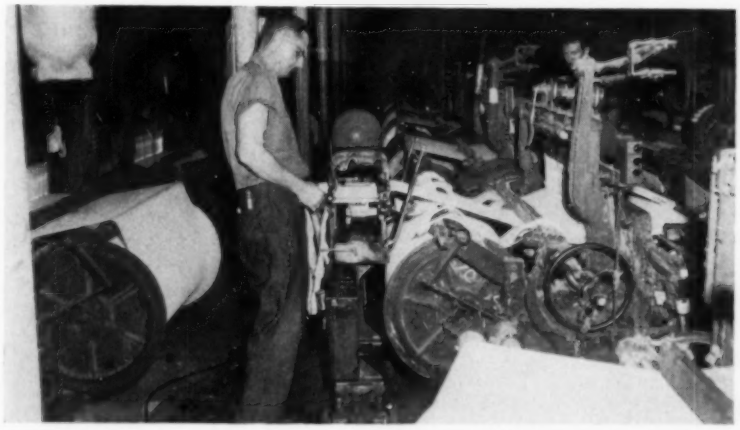




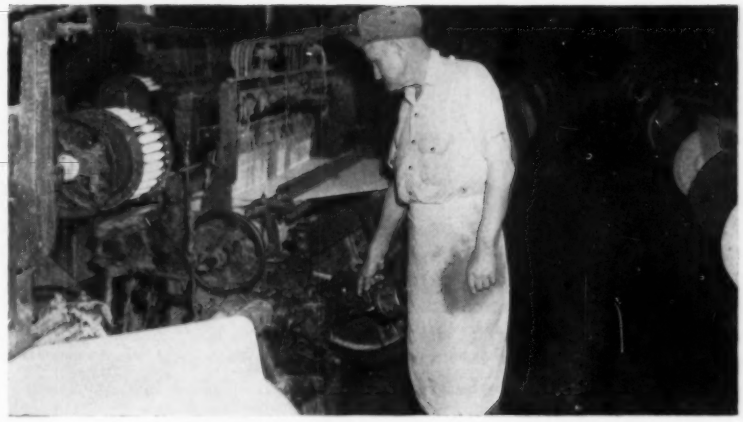
WORKLOAD for the weaver is 68 looms. Although the fabric is a basic two-harness weave, four harnesses are used to relieve crowding of the warp ends.

BATTERYHANDS fill 88 batteries. Battery-filler trucks are used, and the hoppers are refilled from boxes placed in a central location in the weave room.

THE CLOTH is doffed in 300-yd. rolls and placed on trucks for transfer to the cloth room. The looms have a high-roll worm take-up.



NEW WARPS are tied to the patterns on the looms with a 36-in. portable tying-in machine. Each warp will run about six weeks in the loom.



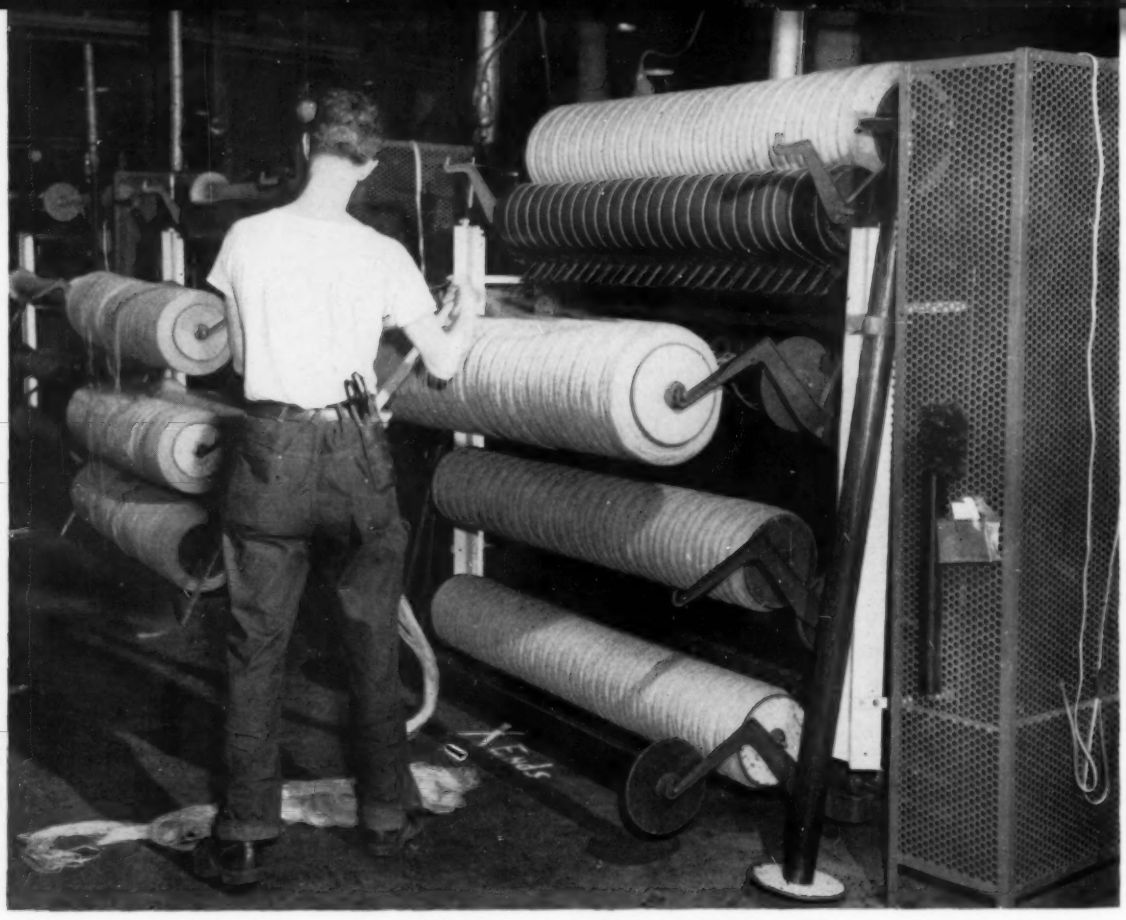
EACH LOOM is thoroughly lubricated every two days. The oiler goes over half the looms one day and the other half the next day and then repeats the cycle.

CLOTH GRADERS inspect the cloth, fold by fold, on flat tables in the cloth room. About 325,000 yds. of cloth is produced at Julia Cade Mills each week.

second-quality cloth is less than 7% of total production.

The warp yarn is sized on two double-cylinder slashers that have friction drives and operate at a speed of 60 yds. per min. The front squeeze roll is blanket-covered and weighs 610 lbs., and the rubber-covered back roll weighs 513 lbs. A gas-fired boiler is being installed to generate steam for the slashers and will replace the coal-burning boiler now in use.

All the cloth produced at Julia Cade is closely inspected on tables in the cloth room. The cloth is spread flat and turned by hand by the graders after it has passed through the shearing machines and the folders.



WOOL-CARDING QUALITY CHECKS at Mohawk include weighing 24 ends from every spool. The card section man, gathering a test sample here, makes this check. White, upright fluorescent lights at either side of the card help the card tender keep close watch on the running ends.

# *Improved CARDING at Mohawk Makes More and Better Roving*

**Modern techniques in carding wool, which include neoprene-impregnated canvas condenser tapes, burr-crushing rolls, and self-stripping clothing, have resulted in—**

- **More-even roving**
- **Cleaner yarns**
- **Faster production**
- **Less cleaning time**

**By JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

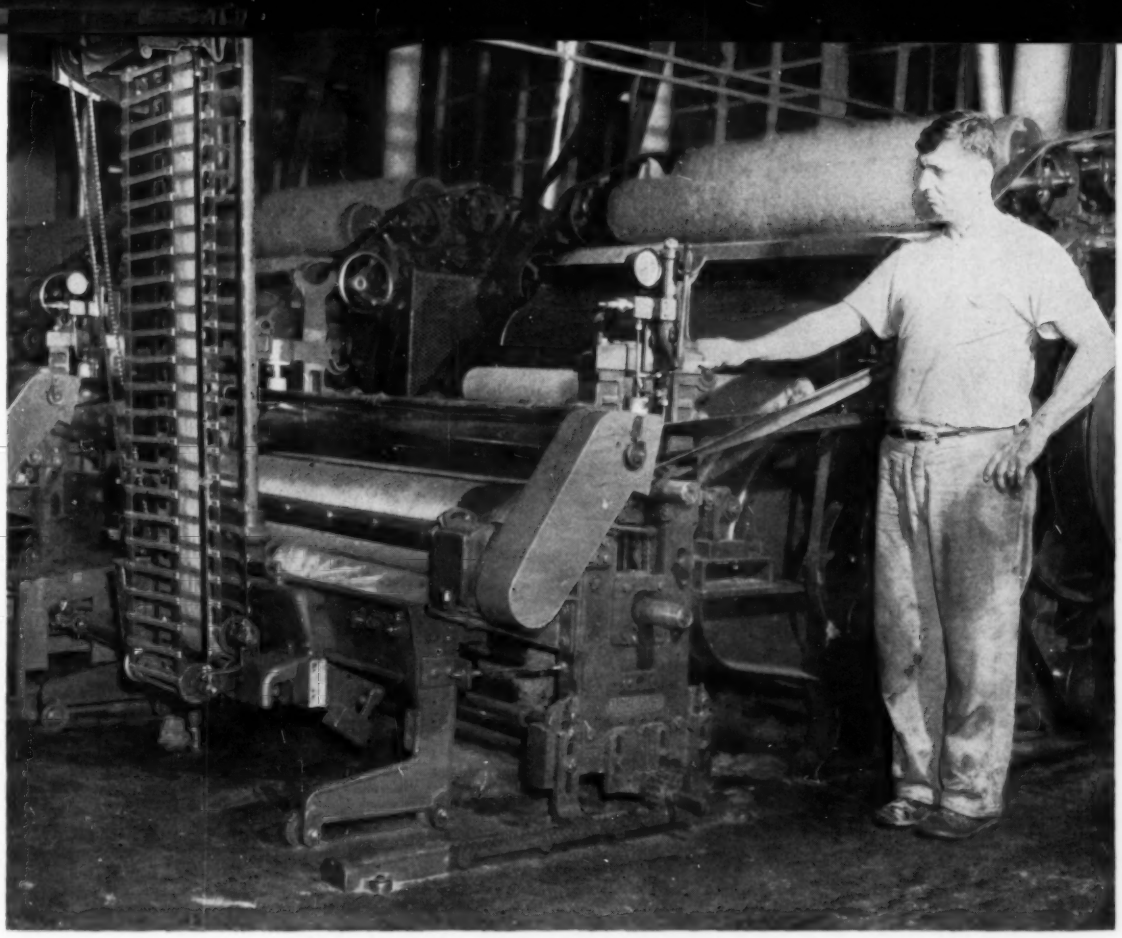
Mohawk Carpet Mills, Inc., Amsterdam, N. Y., has made several changes on its wool cards that have improved quality and production.

Mohawk runs a variety of yarns from wool, blends of wool with Durlon, all Durlon, and blends of Durlon with nylon. Durlon is Mohawk's special rayon staple carpet yarn. Some of these yarns are spun from stock-dyed material.

Because the carpets made from these yarns are not scoured in the finishing operation, the material must be kept clean during processing. One trouble recently corrected at Mohawk was spots and streaks in finished carpets. The trouble was traced to the leather condenser tapes.

These tapes required constant lubrication to keep them supple, and the oil would transfer to the materials being processed.

Working with Mohawk's techni-



BURR-CRUSHING-ROLL pressure is hydraulically controlled at 3,500 lbs. Foreign matter crushed by the rolls falls out of the stock and under the card.

cians, Benjamin Booth Co. developed a tape that solved the problem of oil spots and led to increased carding production. The tape is made from tightly woven canvas combined with a rubber base and impregnated with neoprene. Since it requires no lubrication, Mohawk now saves the previous cost of tape lubrication and the 10- to 15-min. waste run after lubrication.

Two men in each card room spend their full time overhauling cards. One card in each room is stripped down and thoroughly cleaned and checked each week.

All worn parts and bearings are replaced during this overhaul. Cylinders, doffers, workers, and strippers are ground; and card clothing is replaced if it is worn or the wires are bent.

### Cards Stripped at Changes

Self-stripping card clothing has also reduced maintenance time and helped quality. Cards are stripped now only when colors or fibers are changed; so there is no chance of foreign fibers contaminating the yarn.

A cleaning crew continuously travels around the card room. The crew stops each card in rotation and cleans and oils every card during each shift. Lint is removed with compressed air and wiping cloths. Scavenger rolls are cleaned at least twice each shift, and waste is removed from under the cylinders at this time.

Burr-crushing or Peralta rolls have done much to improve the quality of the yarn. Most foreign matter is removed before the web is transferred to the tapes, and the web is not divided by burrs that stick to the fibers and give uneven selvages.

The top burr-crushing roll is operated at a pressure of 3,500 lbs. when wool is run. The pressure is relieved when other fibers are run. The rolls are fitted between the Scotch feed and the finisher, and burrs are crushed into powder and fall out of the material under the finisher.

### All Roving Is Checked

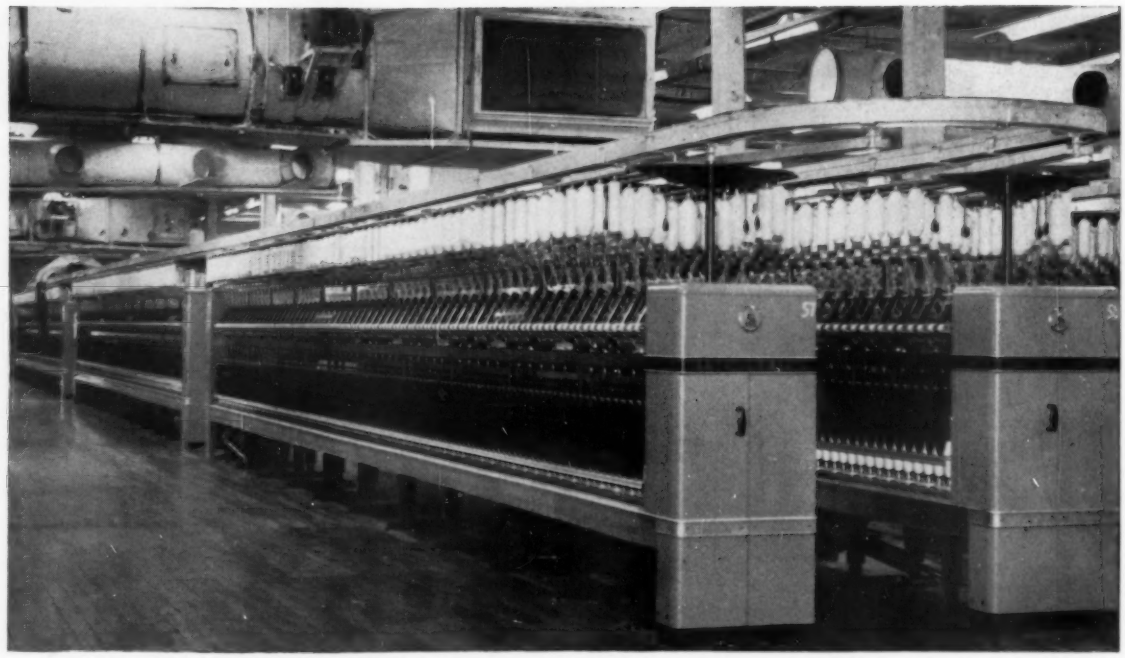
Fluorescent lamps are fixed in a vertical position at either end of the spools so that the card tender can constantly check the roving for unevenness.

Every spool of roving that comes from the card is checked for weight. The card-section service man does this job, and he gathers roving from 24 ends. He weighs these ends after they have been accurately measured on a peg-board device fixed to the wall.

If the roving is off standard, it is reprocessed and the card is adjusted to deliver the correct weight. The roving weighs from 290 to 690 grains per 75 yds., according to the yarn required. The tolerance is 3%.

In addition all 96 ends from each card are checked every day. An inspector also spot-checks five or six cards in each card room each day.

The roving is then spun on both mules and ring frames.



NEW SPINNING FRAMES at Russell average 15 ends down per thousand spindle hours.

# *At Russell Mfg. Co.—*
# *YARN COSTS Cut 5¢ per lb.*

**Russell Mfg. Co., Alexander City, Ala., reduced yarn costs 5¢ a lb. for 26s knitting yarn and increased knitting efficiency 5% with spinning improvements. Other advantages—**

- **Ends down—15 per thousand spindle hours**
- **Work assignment—30 sides per spinner**
- **Spinning-frame efficiency—99%**
- **Room temperature—lowered 10° F.**

**By WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

THE COST OF PRODUCING 26s knitting yarn has been reduced 5¢ per lb. at Russell Mfg. Co., Alexander City, Ala. At the same time, knitting efficiency increased 5%. These improvements, according to the management, resulted from the installation of new Gwaltney SG spinning frames equipped with the Pneumafil central materials-recovery system in Mill No. 2. The 4-in.-gauge, 240-spindle frames have 3-in. rings and 10x5 roving creels.

Russell says the frames are set up to produce maximum pounds of yarn per operator, not to operate at maximum speeds. Front-roll speed is determined by ends down, which to date have not exceeded an average of 15 per thousand spindle hours. The mill reports that this low ends-down figure is attained partly as a result of more-uniform humidity and temperature distribution produced by the materials-recovery system.

The small number of ends down and other factors make it possible in spinning 26s yarn, an average number, to assign 30 sides to each spinner. Previously, on the old 228-spindle conventional frames spinning this number, each operator ran 14 sides and ends down averaged 35 per thousand spindle hours.

The 26s yarn spun at Russell is a soft-twist knitting yarn made from Middling Bright 1 5/32-in. cotton with a Micronaire reading of 4.3. Hank roving is 2.00, but later it may be changed to 1.75. Twist multiplier is 3.25, draft 26, front-roll speed 147 rpm., and spindle speed 8,000 rpm. Frame efficiency is 98 to 99%, compared with 91% for the old frames. Efficiency is based on hank-clock readings and actual front-roll speed.

When the frames were first installed, the management believed that a large-circle traveler would run better than a small-circle traveler. Weeks of testing proved this thinking to be correct, and a 1½-circle split-back Car-

ter traveler was adopted as standard.

Special attention was given to breaking in the new rings. On coarse numbers (14s) spun at maximum front-roll speed (195 rpm.), the traveler was changed every half hour for 4 hrs., once each hour for the next 8 hrs., every 4 hrs. for the next 16 hrs., and every 24 hrs. for two weeks. The frames are now on a 48-hr. traveler-changing schedule for six months. When this break-in period is ended, the mill believes the travelers will run 900 hrs. without being changed.

The drafting system includes special antifriction sealed-bearing rolls made by Cole Engineering Co. These rolls have a maximum taper of 0.002 in. Front rolls are buffed on a centerless grinder every six months with zero run-out tolerance. Back and front rolls are alternated after each buffing; the center roll is not buffed. So far, Russell has had no roll failures.

### Frame Stops Smoothly

The friction motor brake on the frames was replaced with a Clark dynamic rectified d.c.-motor brake that stops the frames in 8 secs. The ends remain tight, and the operator does not have to jiggle the ring rail to start the frame.

The frames are driven by water-cooled Reliance motors that help keep the heat down in the spinning room. To prevent condensation on the pipes, Russell heats the water to 77° F. before it enters the system. A gravel and mechanical filtering system is

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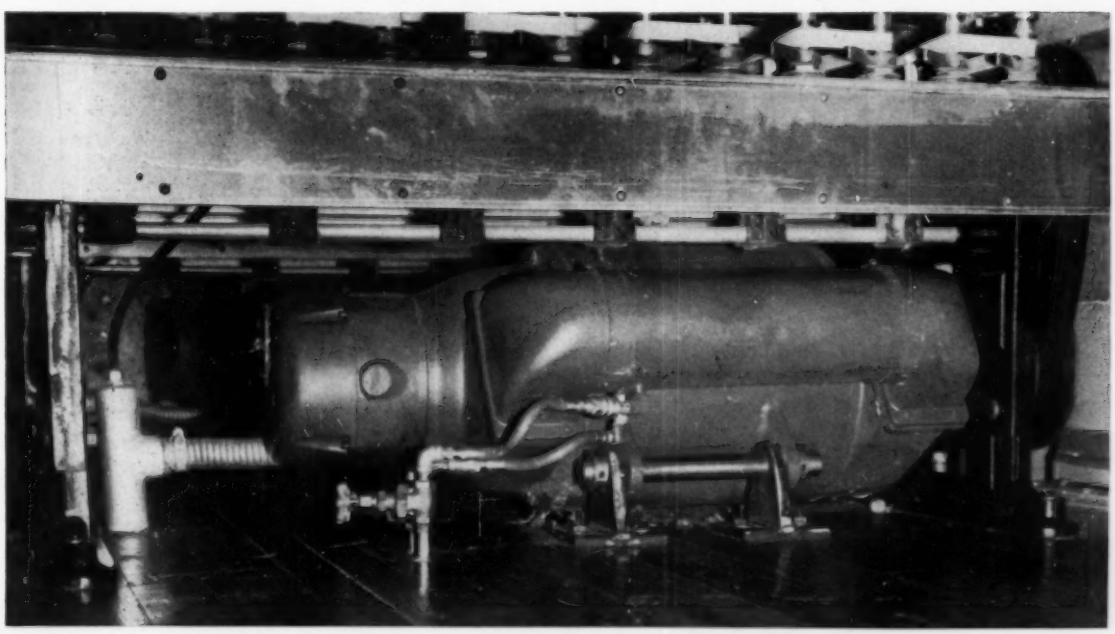
**FRAME GEARING** is checked by Harlan Blankenship, superintendent (left), Bruce Allen, overseer of spinning, and David Crockett, Saco-Lowell erector.



**WATER-COOLED MOTORS** equipped with heat exchangers drive the frames. Motors are 20 hp.

# Alabama TOE Evaluates Four NEW WAYS TO SLASH

Men from 22 Alabama mills met at Auburn for the annual spring meeting of the Alabama Textile Operating Executives. During the slashing session, they discussed—

1. Advantages of synthetic-rubber-covered squeeze rolls
2. Controlling yarn stretch between 1½ and 2%
3. Making uniform size with viscometers and homogenizers
4. Value of multimotor drives

## 1. Rubber-Covered Rolls

Slasher squeeze rolls covered with synthetic rubber have a strong foothold in the 22 mills reporting on their slashing practices. The rubber rolls are being used in 14 mills. The other eight mills report that they have had no experience with the rubber rolls.

In most mills the rubber rolls are giving best results in the back position. But the newer covers are giving excellent results on both the back and front rolls.

Reports by mills on rubber-covered rolls are:

**Mill A**—"We have been using rubber squeeze rolls about six months. We use one rubber roll to each slasher and find it very satisfactory on the front or finishing roll. These rolls give 2 to 3% more size pickup than wool-blanket-covered rolls.

"We have two three-cylinder slashers running 68 yds. per min., with 6 to 7% moisture content, 12 to 13% size content, 1½ to 2% stretch, on 21s to 25s yarns with 1,750 to 2,500 ends per set.

### Give Constant Pickup

"The rubber roll gives a constant uniform pickup throughout the set and eliminates all blanket marks. However, the rubber must be used on rolls free from scores, pits, or dents; they are not satisfactory on uneven-size rolls.

"We have been using a 8 9/16-in. roll six months and have just buffed it for the first time. The roll weighs 550 lbs., and we use 450 psi. pressure."

**Mill B**—"All our rolls are rubber-covered. Our average speed is 60 yds. per min. We leave from 6 to 7% moisture content in the yarn. Our stretch is less than 2%. These figures are for 12s to 34s yarn with 2,134 to 8,508 ends per set.

"Rubber covers are satisfactory on the finishing rolls. Our roll diameter is 6⅝ ins. The roll density is 50 units when measured with a densitometer. We buff the rolls when the size pickup becomes low. We usually buff the back roll and then move the finishing roll to the back position. This system is satisfactory.

"We apply 1,020 psi. pressure to the front roll and 960 psi. to the back roll. These pressures are on 72-in. rolls and include the weight of the rolls."

### All Rolls Are Rubber

**Mill C**—"We run rubber rolls on both the back and finisher rolls. Both rolls are 9 ins. in diameter. We buff the finisher roll about once a year and buff the back roll every three months. The rolls weigh 700 lbs., and we apply 30 psi. additional pressure."

**Mill D**—"We have been using rubber rolls about a year with fairly good results; however, we think a wool-blanket roll or a yarn-wound roll will dress the yarn better.

"Slasher speeds are 60 to 75 yds. per min.; moisture content is 6½ to 7½%; size pickup is 13 to 14%; stretch is 1 to 1½%; yarn numbers are 20s to 32s; ends per set are 3,360 to 5,368. We use 400 psi. pressure in addition to the weight of the roll."

**Mill E**—"Rubber rolls are satisfactory in both positions. Our finisher rolls are 6¾ ins. in diameter. We buff them once a year. The back-roll diameter is 5¾ ins., and back rolls are buffed every two years. We use 700 psi. pressure on back and front rolls."

**Mill F**—"We have been using rubber finisher rolls about 10 months, and size pickup is 2 to 3% greater than on wool-yarn rolls. Yarns are finished smoothly even at increased slasher speeds. There is no noticeable difference in moisture content or stretch on 40s combed yarn with 4,000 ends per set.

"The finisher rolls are 9 ins. in diameter, and we buff them every six months. The back rolls are also covered with rubber and are satisfactory. We never use more than 150 psi. of pressure in addition to the roll weight, and we usually don't use any added weight."

## 2. Controlling Stretch

All 22 mills agree that the proper stretch of cotton yarn at the slashers is 1½ to 2%. There are many ways of controlling the stretch. Practices by mills are:

**Mill A**—"Yarn stretch is checked from the roll at the back of the size box to the delivery roll at the front of the slasher. We control our stretch to 2% and check it about once a year.

"Excessive stretch destroys the elasticity of the yarn and weakens it so that looms stop more often. The breaking strength of the cloth is also lowered. To insure proper stretch, we have a multimotor drive and the creels are synchronized with the yarn delivery to control the speed at the front and back."

**Mill B**—"We test our yarn for stretch with two yardage counters running at the same time. The test is made between the entrance roll at the back of the size box and the delivery roll at the front.

"Stretch of 1½ to 2% is right for our conditions. If stretch is below 1½%, the yarn has a tendency to roll up between the size box and the drying cylinder and breaks ends at the lease rods.

"When yarn is stretched more than 2%, there are excessive loom stops. The soft-filled sheeting and flannels we weave also decrease in strength. We made several tests to determine the effect of excessive stretch on several styles of cloth. The results on

three styles are: yarns with a stretch of 1½% are 9%, 14%, and 16% stronger than yarns stretched 2¼%."

**Mill C**—"We use yardage counters at several checking points to check our yarn stretch. We test from the back section beam to the front section beam, around the drying cylinders, and from the size box to the front end. We figure the percentage of stretch for every 100 yds. run during a test.

### Checks Made Often

"On dry warps, our stretch is 1½%; on wet warps, it's 2½ to 3½%. Our laboratory men make a check every few days, or as often as necessary.

"To control the stretch, two of our slashers have tension controls. Weights are taken off the section beams as the sets run out. All the creels are manually operated and controlled. We check the tension closely."

**Mill D**—"We measure yarn stretch by placing a yardage counter on the back beam in a creel and another counter on the loom beam at the front. Both counters are set at zero yardage. We run the slasher to 100 yds. on the back counter. Then the number of yards over 100 on the front counter is the percentage of stretch. The stretch is also checked from the back of the size box to the back cylinder.

"We hold our stretch to 2%. If stretch is less than 1½%, the yarn will be too slack at the large split rod and ends will break out. The stretch is checked on each new set."

**Mill E**—"We check yarn stretch from the front beam in the creel to the loom beam. We use surface counters placed on contact points while the slasher is stopped. Then the slasher is started and stopped again at 100 yds. of yarn.

"Cotton yarn is held to 1½ to 2% stretch; rayon has 5 to 6%. We check the stretch every 10 days. Our multimotor drive has a numbered dial wheel so that we can tell by looking if the yarn is in the range of stretch control desired."

## 3. Uniform Size

In an effort to obtain more-uniform size, five mills reporting are using homogenizers and viscometers. Three other mills check their size viscosity with homemade equipment. Answers by mills are:

**Mill A**—"Uniformity of size is the main thing we hope to gain from homogenizers; however, we also save on size because we reheat our left-over size on Monday mornings. No appreciable gain is shown in weaving efficiency."

**Mill B**—"We have a viscometer on only one slasher. We test the size viscosity on our other slasher with a small brass cup and stop watch. Both these methods show us quickly if size is being prepared properly. We have two homogenizers that give very satisfactory results.

"Size viscosity affects the type and weight of squeeze rolls under normal conditions. The best conditions for correct penetration of size are: properly seasoned squeeze-roll covering, uniformly prepared size, correct predrying of section beams, correct temperature of size, and correct slasher speeds.

"With these conditions, we use a constant amount of pressure on the squeeze rolls. A reasonable amount of pressure squeezes more size into the yarn. But if too much pressure is applied, too much size is squeezed out of the yarn.

"Variable squeeze-roll pressure is needed under these conditions: (1) when a lap has formed on a squeeze roll and cuts a trench in the roll, (2) when two-ply yarn and single yarn are both run in the same set, or (3) when new wool yarn is wound on squeeze rolls.

### Don't Overheat Size

"Size that has stayed in a storage kettle at too high temperature with closed coils has a high viscosity and feels rough. Consequently, it sheds off at the front of the slasher and at the loom. When wool yarn on squeeze rolls builds up too much, it becomes mushy and the yarn underneath rots. Then all the yarn has to be cut off and replaced from the roll outward.

"Size viscosity is controlled by checking the size-making employee constantly. We also check scales, instrument controls, and temperatures closely.

"Pearl starch in homogenizers gives more size pickup than thin-boiling starch. But it sheds more at the slasher and loom, and it does not penetrate the yarn as well as thin-boiling starch. Weaving efficiency is not affected by pearl starch."

**Mill C**—"We use a viscometer to show the viscosity of size after it is cooked. But we do not use it as a controlling factor in cooking the size. We get better and more-uniform size with homogenizers.

### Saving in Size Cost

"Viscosity does not affect the type and weight of squeeze rolls. The roll weight has to be unusually high to affect the size content at any viscosity. An extreme change in the type of roll, such as cork, calls for lower viscosity.

"There is no actual improvement in yarns slashed in homogenizers, but there is a saving in size cost."

**Mill D**—"We use a homemade viscosity-measuring cup to check our size. The cup holds 6 oz. of size and is made from a 2-in. length of bronze pipe with a 4⅜-in. outside diameter and a 4-in. inside diameter. A concave bottom is put in the pipe. The bottom has a 1-in.-dia. plug 1 in. long in it, and a ⅜-in. hole is drilled in the plug.

"To use the cup, we take a sample of size at 212° F. The sample runs through the hole in the plug in 8 secs. Batches of size checked with this method are very uniform."

**These officers were elected at the meeting of the Alabama Textile Operating Executives:**

**General Chairman: Oliver Smyth, Pepperell, Ala.**

**Vice General Chairman: R. L. Alford, Birmingham, Ala.**

**Secretary and Treasurer: Cleveland L. Adams, Auburn, Ala.**

**Executive Committeemen: Calvin Warren, Alexander City, Ala.; John Quinelle, Sylacauga, Ala.; C. W. Brown, Shawmut, Ala.**

## 4. Multimotor Drives

Twelve mills are using multimotor slasher drives. They report the following results from the drives: (1) more-uniform warps, (2) increased yarn yardage on loom beams, (3) higher slasher speeds, (4) less downtime for maintenance, (5) fewer broken ends at the slasher, and (6) increased loom efficiency.

Reports by mills are:

**Mill A**—"We are getting more-uniform warps from start-ups all through our warps. The quality is definitely better throughout the entire set. There is an even pull on the yarn all the time, and there's no jerking or excess pull on the yarn from the delivery roll."

**Mill B**—"Our slasher efficiency is increased with multimotor drives, but we're not sure how much. The yardage on the loom beam is increased as much as 5%, which reduces the time the slasher is stopped for doffing beams. There's also less warp changing in the weave room."

**Mill C**—"Multimotor drives increase slasher efficiency. More-even tension on the yarn eliminates guesswork and broken ends. Slasher operating cost is lowered, and weaving efficiency is increased.

"Slasher speeds were increased from producing 117 oz. per min. to produce

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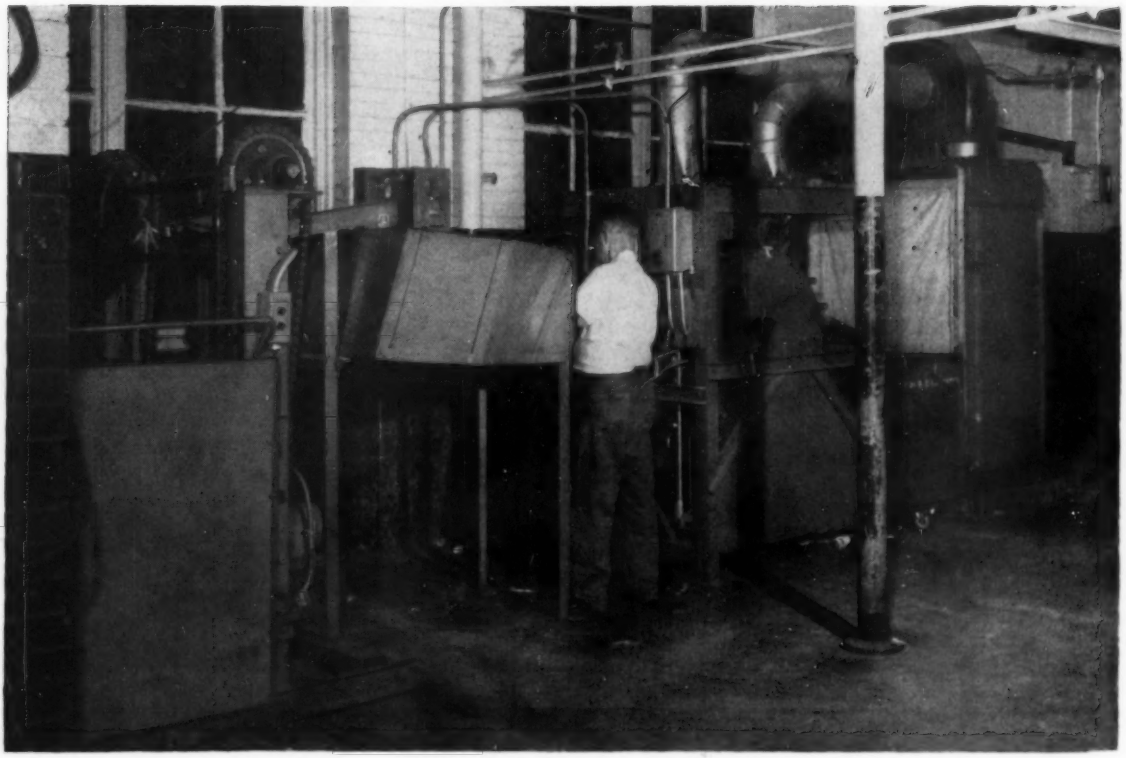


THE NEW BOBBIN STRIPPER is composed of an electric lift for trucks of bobbins, hopper, bobbin stripper, and waste-collector bin.

# Pepperell's New BOBBIN STRIPPER Cleans Roving Bobbins Fast

• A bobbin stripper developed at Pepperell Mfg. Co. strips roving from bobbins at speeds up to 60 bobbins per minute. And because the cleaned surface of the bobbins is not touched by the machine, bobbins are never damaged.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

PEPPERELL MFG. CO., Lindale, Ga., is using three roving-bobbin strippers with waste-collector bins to strip an average of 500,000 bobbins a week. The Lindale mill has over 100,000 cotton spindles.

The bobbin stripper was developed by Comer Turley, mechanical superintendent at Pepperell's Lindale mill, and is manufactured by West Point Foundry & Machine Co.

The machines are in three card rooms at Lindale so that bobbins have to be moved as little as possible. The number of bobbins to be cleaned in any given card room is not great enough to run the machines constantly at their highest speed of 60 bobbins per minute. When bobbins are available, 90,000 are cleaned during an 8-hr. shift.

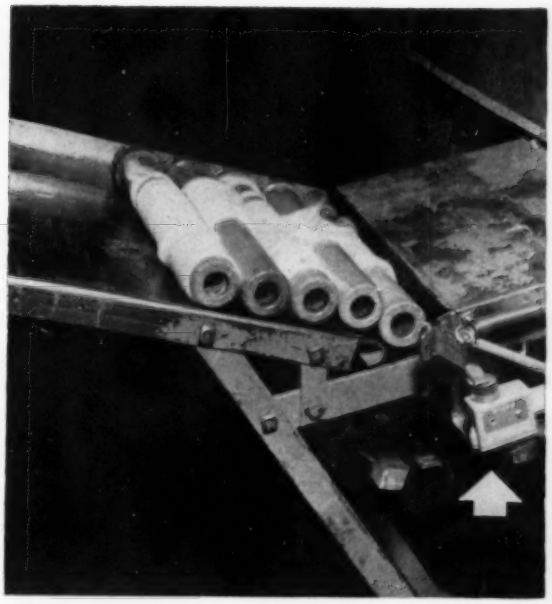
One employee operates each machine. His work includes dumping bobbins in the machine hopper with a power lift, checking bobbins to see that they enter the stripper feed in alignment, removing the trucks of stripped bobbins, and removing stripped waste from the waste-collector bin.

Greater production could be obtained by having a part-time operator do part of the work, but the present production cleans all of Lindale's bobbins.

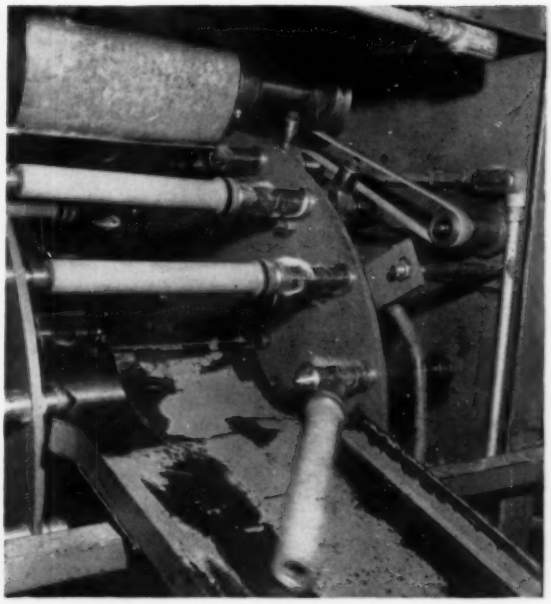
### How the Stripper Works

Bobbins of roving are brought to the bobbin stripper in a conventional roving truck, and the truck is rolled on a platform at the bobbin hopper. The power lift will not raise until a safety door is shut to enclose the box. Then the operator pushes an electric switch to raise the truck, which dumps the bobbins into a hopper automatically.

Bobbins are released from the hopper chute by gravity, and the operator guides them into the stripper several at a time by hand. If a bobbin enters the machines crooked or two at once, a limit switch stops the machine. Each bobbin is counted as it enters the machine by a mechanical



MICRO SWITCH (arrow) stops the stripper when two bobbins enter the feed. The operator guides the bobbins by hand.



STRIPPED BOBBINS drop from the spindles to a stationary chute. Then they fall into an empty roving truck.

counter in a padlocked box.

Bobbins are positioned for cleaning with a revolving disk that contains 18 spindles with spring arrangements on approximately 4-in. centers. The cam action of the revolving disk opens to let the bobbins enter and leave the cleaner.

The machine has two cleaning cylinders; one has bristles, and the other is covered with card clothing. Both cylinders are set ¼ to ½ in. from the bobbins being cleaned so that the bobbins aren't touched.

A vacuum hood over each cylinder removes the roving, and the waste is piped to the waste-collector bin.

A hand dial is used to set the machine for three lengths of bobbins: 8, 10, and 12 ins.

When the bobbins enter the feed of the stripper, they're chucked into the open spindles by the cam action. Then they start to revolve in the opposite direction from the way the roving is wound.

The revolving bobbins go under the cylinder with the brush, and the loose end of the roving is removed by the brush and the vacuum. However, the brush does not touch the bobbin.

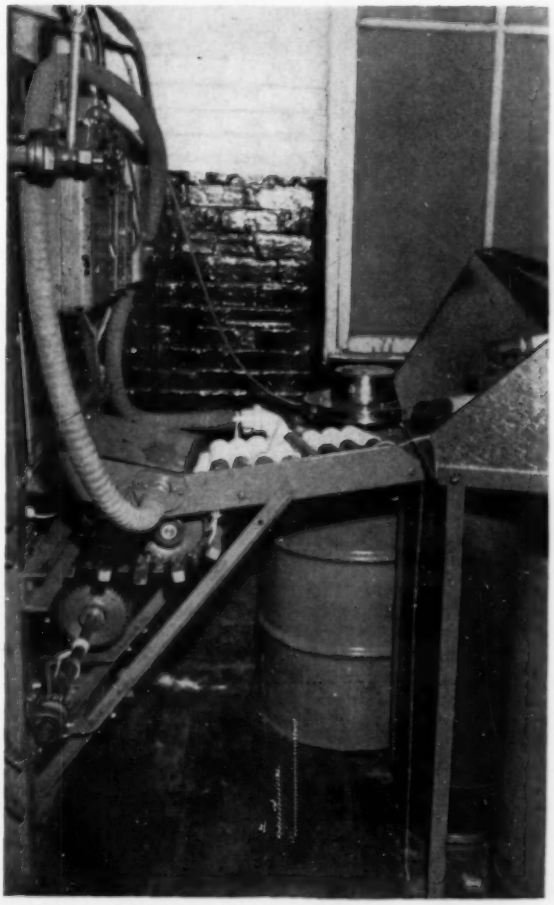
### Cleans Inside of Bobbins

Bobbins with excessive turns of roving or stuck roving are completely stripped when they go under the cylinder covered with card clothing.

The inside surfaces of the bobbins are cleaned with a smaller vacuum cleaner. This cleaner has a ¼-hp. motor and fits on the top of a 55-gal. drum. When a drum is filled with lint and dirt, it's removed and another drum is put under the cleaner.

Minor adjustments to the bobbin stripper are made by a card-room fixer. Other adjustments are made by a machine-shop mechanic. Comer Turley says, "Little maintenance is needed. The spindles have to be cleaned periodically to insure free turning. Motor drives and other parts have to be oiled by schedule.

"During the last three weeks, the three strippers operated a total of 1,242 hrs. with only 10 hrs. of stoppage. Within this period, over 1.5-million bobbins were cleaned."



INSIDES OF BOBBINS are also cleaned at the same time waste roving is stripped. The waste drum fills within a few days.

# How Avondale Finishes TICKING

Avondale's Alexander City plant in Alabama produces a wide variety of colored-yarn tickings. These fabrics are finished at the plant by simple methods that start with proper slashing. Keys to success with these goods include—

- An unusually clean plant.
- Modern methods and equipment

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

TWO FACTORS that help Avondale's ticking plant at Alexander City, Ala., to produce clean, first-quality goods are good housekeeping and modern machinery.

The fabrics processed run from 3.50-yd. twills to 8-oz. materials in herringbone, sateen, and twill constructions. The standard ticking of alternate blue and while stripes has been supplanted to a large degree by striking patterns of stripes of varying widths and many colors.

Warp-preparation methods at this plant have to take into consideration the effect of slashing on the finished product. Many styles are finished directly off the burling perches by a run through a seven-roll calender. There is no chance to remove sizing material and start over again.

So Avondale keeps close control on slashing operations. Eight Saco-Lowell and West Point Mfg. Co. slashers are equipped with size-box-level controls, Brown Moist-O-Graph controls to maintain correct moisture content in the finished warps, and double size boxes to size dark- and light-colored yarns separately.

Avondale dyes beamed yarn and does not dry it before slashing. Excess water is blown out by compressed air, but the yarn still averages about 100% moisture content at the time of slashing. In order to maintain even size pickup in dyed and undyed yarn, all beams of gray cotton yarn are given a wetting-out treatment in the dyehouse.

Two 30-in. dry cans that are a part of the slasher range partially dry the warps just before they enter the size boxes.

The two size boxes on the slashers help in producing clean and well-defined stripes, because dark shades that might bleed slightly can be put through one box while light and undyed yarns are running in the other.

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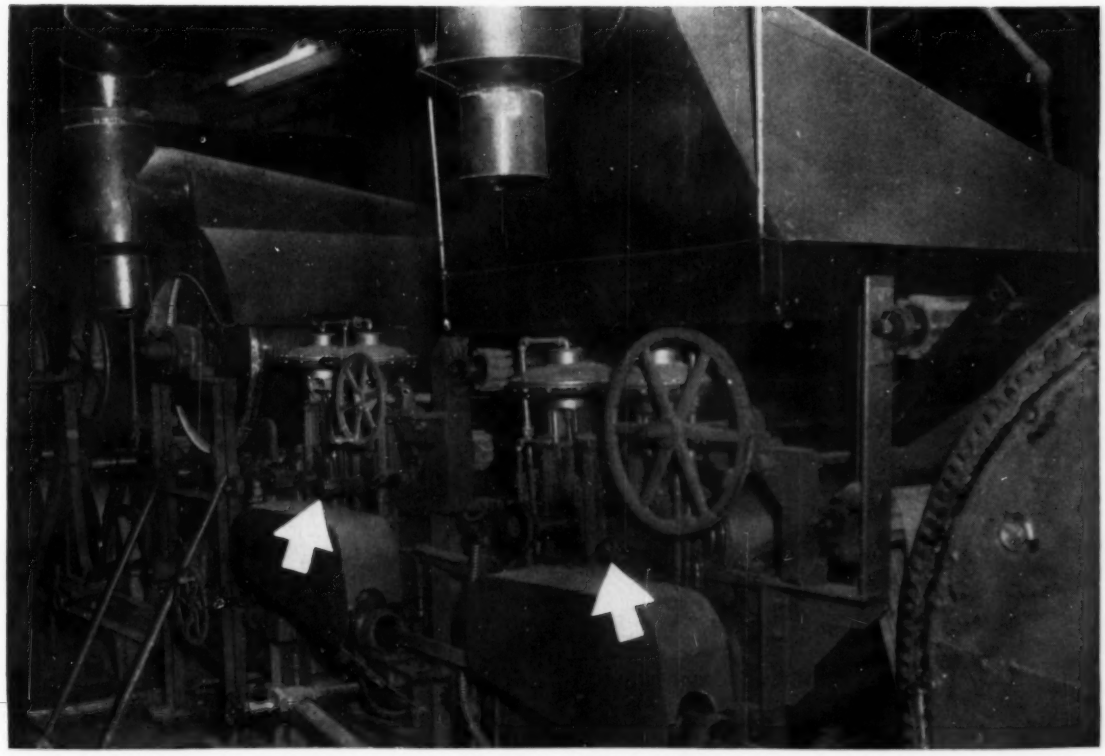
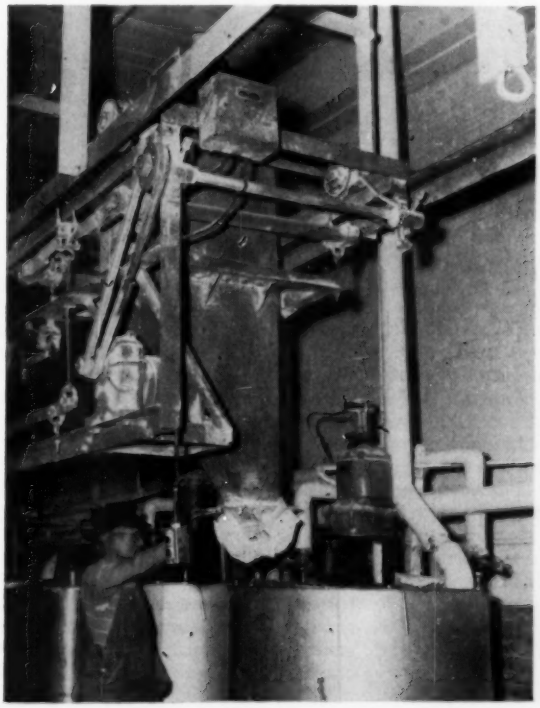
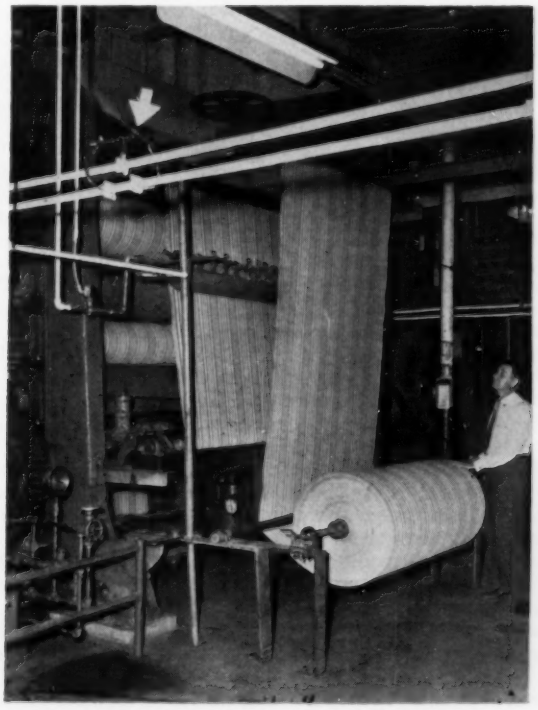
**SLASHING AND FINISHING** are combined—at least as far as ingredients are concerned—in some styles of ticking. These multicolored warps are separated by beam and also by color before entering the comb.



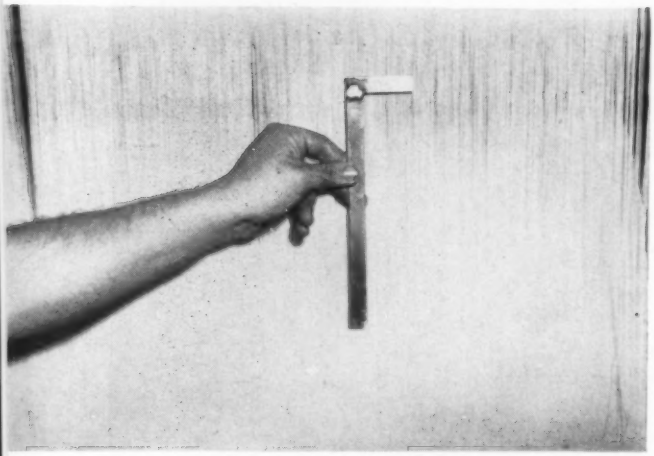
**DOUBLE SIZE BOXES** (arrows) permit dividing colored warps into light and dark shades for separate slashing and prevent dulling of light, bright shades by heavy shades that might bleed slightly in the hot size mixture.



**STARCH WEIGHING AND MIXING** are highly mechanized. Starch is stored in a silo and transported by a screw conveyor to the hopper mounted on tracks. Scales support the hopper and can be set to shut off the conveyor when the weight is right for the formula used.



**FIVE-ROLL CALENDER** with hydraulic set produces a smooth face and breaks down stiff finishes to the proper hand. Note the humidifiers (arrow), one of many sets installed in the finishing room to insure rapid moisture regain so fabric hand can be checked correctly.



GAUGE can be made for each type and model of loom to help keep the lugs high on the picker sticks.

# Keep Lugs High for Top LOOM Performance

- When lugs are low on loom picker sticks, it is usually an indication that mill production and employee morale are correspondingly low
- Use a lay and pick gauge to raise the lugs and mill profits and to cut costs and seconds

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

ONE LOOK at a weave room and any experienced loom man can tell a lot about the mill. He can see what kind of loomfixing is being done and the general mechanical condition of the looms, and he can make a pretty close estimate of the production and off-quality-cloth figures.

There is no big secret to this method of evaluating a weave room. It is done by looking at the position of the lugs on the picker stick. The lug is a reliable barometer, showing to the exeprienced eye the present condition of the loom and what can be expected of it in the future.

It is rare to see the lugs of all looms in a room at the same position on the stick. Some lugs will be higher than others, but there should not be more than ½-in. difference between any of them on the same model and width of looms.

If the majority of the lugs are low, it denotes worn pick balls, pick cam points, parallel parts, pick shafts, drive gears, shafts, and other parts. One or all of the following conditions may be responsible:

1. Incompetent loomfixers
2. Lack of cooperative maintenance
3. Lack of loom parts
4. Failure of supervision
5. Careless weavers

### Looms Don't Wear Out

There may be some who will claim that "worn-out looms" should be added to the list, but looms as a whole do not wear out. If properly repaired and maintained, a 1900 vintage Model E loom will be just as good mechanically as a 1950 or later Model X loom. After the first few years, most of the small working parts of a loom and some of the major parts have worn out and must be replaced. After about 10 years of operation, there is little left of the original loom except the frame.

But to get back to the question of low lugs and who or what is responsible:

An incompetent loomfixer may be one who was not trained correctly, he may be lazy and do no more than he is made to do, he may be ill-suited for the work and not mechanically inclined, or he may be overloaded and not capable of keeping the job up.

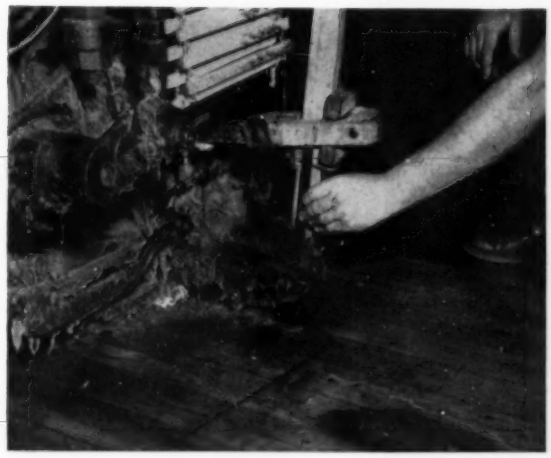
Lack of cooperative maintenance can be the lack of a planned program, it can be a matter of passing the buck from one shift to another, or it can be a disagreement between the loomfixer and supervisor as to a program or schedule of preventive maintenance.

### No Lack of Parts

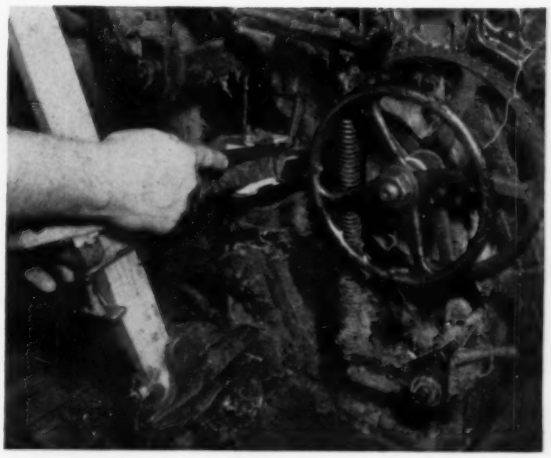
Lack of loom parts was a serious problem in all mills during, and for some time following, World War II. However, the only excuse a mill can have now for a scarcity of repair parts is that it is too stingy to buy them, which is a very short-sighted economy.

It should be mentioned that rebuilt, welded, or otherwise repaired parts are often worse than parts that are worn out because a part wears gradually and related parts wear or else are adjusted to it. Unless care is taken in rebuilding or repairing one of these parts, its basic shape will be changed and abnormal settings will be required.

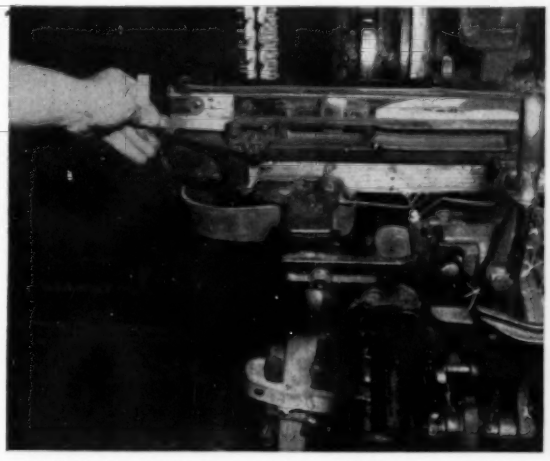
Failure of supervision as a cause of



LOOMS will run better when the lugs are positioned correctly. Full length of gauge is used for this setting.



POWER-ARM setting is made by using the short arm of the gauge in this manner.



STROKE of picker stick is measured from end of gauge to notch near short arm.

PICK is timed with pick ball in hollow of cam, gauge touching front horn of loomside and back box plate.

run-down machinery is obvious. No employee is more cost-conscious or quality-minded than his supervisor. If the supervisor does not insist on well-maintained looms, the loomfixers will not put forth the extra effort needed to keep them in top condition. For efficient maintenance, the supervisor must make constant spot-checks of loom repairs and settings. These checks must be followed up and any oversights corrected.

Careless weavers can do extensive damage to loom mechanisms, especially the picking motion. Starting the loom without having the shuttle fully boxed, disregarding the position of the lay or the checkstrap, or any starts or stops that cause the loom to slam off will put tremendous strain on many of the loom parts.

Also, a weaver can cause damage to a loom by trying to keep it in operation when it needs repairs. A loom that is not operating properly should be stopped and flagged for the loomfixer.

### Use Less Power

Regardless of who or what is responsible for the lugs being low on the picker sticks, the consequences will be serious. The picker stick is a third-class lever with its fulcrum at the bottom or parallel. The lower the power (transmitted by the lug) is on the stick, the more force there will be exerted at the picker, with corresponding wear and strain on all parts of the loom.

The ideal position of the lug is to have it set to transmit just enough power and length of stroke to the picker stick to pick the shuttle smoothly from one end of the lay to the other and seat it firmly in the shuttle box.

An excess of power or stroke will cause uneven flight of the shuttle; undue strain on the picking motion, protector motion, and shuttle boxing parts; and frequent machine stops.

The abnormal running condition of the loom will be reflected in breakage of picker sticks, shuttles, and other vulnerable parts; loss of production; increase in off-quality cloth; higher labor and repair costs; and employee dissatisfaction.

A weave room with all-low lugs looks bad, but one with lugs set at all angles is even worse. If the lugs are low, the machine maintenance, or lack of it, is at least being done in a consistent manner. When some lugs are set abnormally high and others, perhaps on the same loom, are correspondingly low, indications are that there is no system of maintenance at all.

If there is no standard setting of the lug, there can be no workable standards for other parts of the loom.

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THE NEW WAREHOUSE at Caromount is connected by a tunnel to the weave shed. Ramp-like structure is actually the warehouse end of the tunnel.

A BELT CONVEYOR that runs in the tunnel from weave shed to raw storage simplifies transportation of woven goods to the warehouse and eliminates weather problems.

# How Caromount Cut WAREHOUSING Costs

**Inadequate cloth-handling facilities and badly located warehousing areas were giving Caromount Div., Sidney Blumenthal & Co., Inc., a hard time. The mill eliminated backtracking and cut labor costs when it—**

- **Built a new gray-goods warehouse**
- **Put in new finished-goods storage bins**
- **Rearranged processing machinery**
- **Moved most goods with power trucks**

**By ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

THE Caromount Div. of Sidney Blumenthal & Co., Inc., is operating much more efficiently today because of improved materials handling and storage.

Before a new warehouse was built —in the right place—goods that were scheduled for finishing had to lie in what was little more than an open shed while lots were made up. The space had to be shared with trucks delivering goods from the Wilson, N. C., weave shed. If bad weather came, goods had to be put inside to avoid damage and then hauled out again for processing.

When the fabric was ready for the dyehouse, it was trucked by hand to a central area for initial preparation, then moved back and forth through backing, dyeing, drying, and other finishing operations. The method of handling before rearrangement resulted in the crossing of 23 flow lines.

### Warehouse Was the Key

Caromount's new gray-goods (which it calls raw goods) warehouse occupies 32,500 sq. ft. Constructed of concrete block and brick, the 13-in. walls support box trusses that carry the roof. The truss construction allows for extra-large unobstructed bays. Roof construction is 20-year tar and gravel laid on 1½-in. Celotex with 20-ga. Holarib metal roof decking. The warehouse is a full 16 ft. high inside; floors are of 5-in. concrete.

Raw-goods inspection and mending are now carried on under the same roof and set up so that production flow to and from the department results in straight-line flow into the first wet-processing operations.

Raw goods after inspection in the Wilson, N. C., plant are placed on steel pallets and are double-decked in a company-owned trailer by an electric fork-lift truck. These pallets are unloaded at Rocky Mount at the plant and moved directly into the raw-goods area.

Goods coming from the Caromount weave shed move by conveyor through a tunnel under the main roadway between the weave shed and the warehouse. Steel pallets are loaded with pieces and then moved to storage. With this system, goods move smoothly and are protected from the weather.

### Inspection Area Close

With raw storage and raw inspection under one roof, getting fabric to the inspecting perches requires little time. A power fork truck is used to deposit pallets of raw goods beside each perch. The 26 perches are mounted in two rows on either side of a conveyor belt. As the operators examine the pieces, they place them on the conveyor belt, which carries them to the make-up department.

Since the goods are stacked on pallets and moved with an electric fork-lift truck, they are easily stored three pallets high. The goods are quickly located by the make-up department because each pallet and location is numbered and shown in a record system.

With the make-up department adjacent to the dyehouse instead of out in the side yard, goods get started on their way smoothly and with no worries about the weather. A great deal of hand trucking from the old make-up location to processing areas has been eliminated or the distances shortened.

Caromount's pile fabrics require a special package when they are shipped out to customers. The goods are care-

CONTINUED ON PAGE 192

# Tips on Applying Silicone WATER REPELLENTS

**• Silicone products have to be chosen for their suitability to the end use of the fabric and must be applied properly to get best results. The author describes how ingredients are selected for making water repellents and how fabric should be prepared and processed.**

THE TWO TYPES OF SILICONES of greatest importance to the textile industry that are now commercially available are the dimethyl and methyl hydrogen silicones.

For maximum water-repellent properties, it is generally conceded that silicones with a high proportion of silicone-bonded hydrogen (methyl hydrogen type) are desirable. When other properties such as abrasion resistance, tear strength, and sewing qualities are wanted, the proportion is reversed with the dimethyl or other noncross-linking types predominating or at least present in equal amount.

### Making the Product

Since most silicones are oily in nature and are not soluble in water, emulsion techniques are employed to prepare a suitable aqueous system. Emulsions are made by employing emulsifying agents together with mechanical processing in colloid mills or homogenizers. Each producer of silicone emulsions has his own method of handling this problem.

In selecting a suitable emulsifier, it must be kept in mind that any compound having high wetting and/or rewetting properties must be avoided because such an agent will tend to nullify the water-repellent characteristics of the finish. The ideal emulsifying agent is one that is destroyed or rendered inert during the processing of the fabric.

Besides aqueous systems, silicones are sometimes used in solvents such as petroleum fractions or chlorinated solvents. In such cases they are used for spraying or are further diluted with solvents for application.

Emulsions of silicones that are workable in the plant are not sufficient by themselves to provide durable water repellency. A catalyst is necessary to produce the cross-linking of the methyl hydrogen silicone units. Catalysts based on organo-metallic compounds of tin, lead, and zinc are effective.

These catalysts also have to be carried in aqueous emulsifying systems and in most cases cannot be mixed with the silicone emulsions before use. They are preferably packaged separately and then are added to the silicone emulsion immediately prior to use.

Just how a catalyst acts to promote oxidation at the silicone-bonded hydrogen is not clear; but the action may be somewhat similar to that of metallic dryers used in paint formulations, where solubility in the drying oil and ability to promote oxidation by some internal mechanism are primary factors.

### How To Apply

The important factors in the application of silicones are:

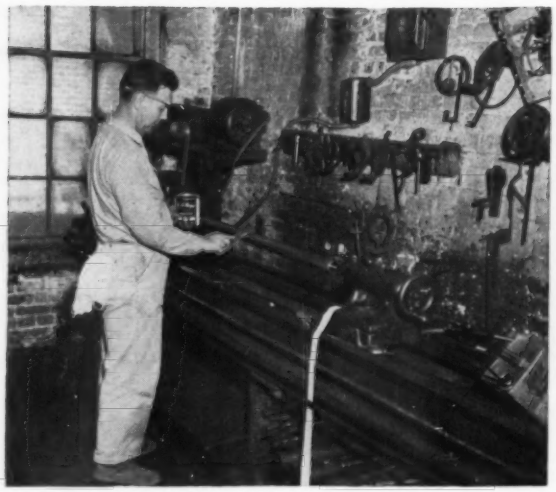
1. The fabric should be clean and free of any dyeing or scouring agents, and the pH should be 6.0 to 7.0.

2. Pickup of the water repellent solution should be adequate to saturate the cloth thoroughly.

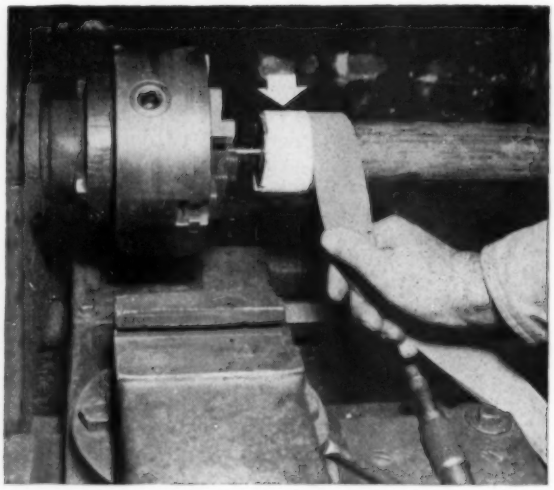
3. The goods should be dried at 240 to 260° F. and cured at 300 to 320° F. for 5 to 10 mins. Curing temperatures may be higher or lower if the time element is adjusted correspondingly.

4. Woolen fabrics should be free of any acids before treating. Because wool might yellow at the temperatures suitable for cellulosic fabrics, special silicone products that cure at 240 to 260° F. are suggested. A product of this type is Hydro-Pruf AB, made by Arkansas Co.

*From a paper presented by A. A. Cook, Research Director, Arkansas Co., before AATCC*



PRESSURE ROLL is covered with glue by Eules R. Hawkins, supply-room employee.



MASKING TAPE (arrow) holds the rubber-cork cover in place when the lathe is started.

# PRESSURE-ROLL COVER
## Improves Weaving at Shelby

**Problem:** High cost of replacing loom pressure rolls

**Solution:** A cover of sponged-rubber-and-cork material

**Results:** The new material cut costs and improved weaving

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

In 1950, Shelby Cotton Mills, Shelby, N. C., began work to reduce the cost of pressure-roll covers for its Draper XD and E-model looms.

The mill weaves fine fancy-cotton, filament-rayon, and spun-rayon fabrics and fabrics from several other synthetic fibers. It has 432 looms: 300 XD looms 46 and 64 ins. wide and 132 E-model looms 44 ins. wide.

Felt pressure-roll covers were furnished on the new XD looms by the loom manufacturer. There were two problems with the felt covers:

1. The steel pressure roll oxidized under each end of the felt covering, and the covering came loose.

2. The felt became hard-packed soon after installation when a lot of pressure was applied to it on weaves with heavy beat-back.

These problems often resulted in second-quality cloth because the roll covering came loose while a roll of cloth was being woven. Recovering the rolls was also expensive both in felt costs and in labor cost.

### Experiments Prove Cover

Shelby's efforts to reduce the overall pressure-roll-cover cost in 1950 involved several experiments. As one of the first experiments, the mill used rubber tubing over the pressure rolls. The tubing was inflated with compressed air and was slipped over the rolls. But the tubing failed because it could not be accurately placed on the rolls continuously. Several other experiments with other materials were also tried.

Then Shelby began experiments with Armstrong Cork Co.'s sponged-rubber-and-cork pressure-roll covering (DK-149). This material is ¼ in. thick and 1¼ ins. wide. The cost in 1950, when the last felt covers were bought at Shelby, was the same as felt.

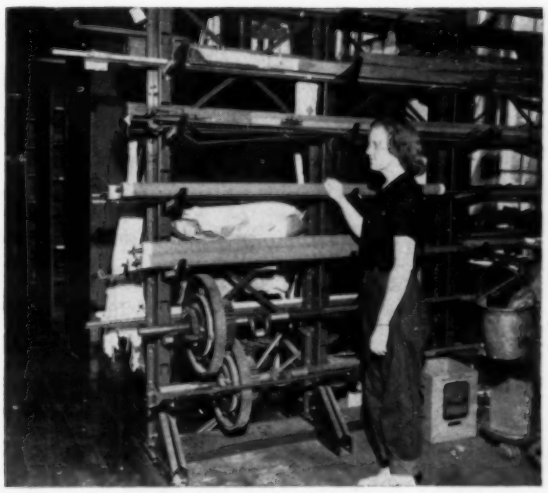
The first experiments with the rubber-cork covers showed that the material did a good job of holding the cloth at the take-up roll at the loom. The material was given trial runs on several looms and was watched closely. Shelby's purchasing agent, M. Q. Hamrick, says: "The material turned out to be much more satisfactory in many ways than anything else we had used; so we have been using it ever since."

### How Cover Is Applied

After Shelby found the best roll cover for its looms, the next problem was to develop methods to apply the cover correctly. This problem has also been solved satisfactorily, and one man re-covers all rolls with a standard procedure.

Shelby has several extra pressure rolls for each width of loom and each model of loom so that at least six

COVER is applied while the lathe runs at 10 rpm. The cover forms a spiral.



SPARE PRESSURE ROLLS are inspected by Thelma Poston, head of the supply room.

rolls are covered at once to reduce replacement time.

The first step in roll replacement is proper preparation of the steel surface. The old cover is pulled off. Then the roll is centered in a lathe in the machine shop, and one cut is taken off the roll surface with a cutting tool. After this cut, the roll is sanded smooth with emery cloth.

A coat of either orange or white shellac is brushed on the roll while the roll turns in the lathe. The shellac makes it easy to remove the old glue the next time the roll is recovered. The roll is removed from the lathe, and the shellac is allowed to dry for 24 hrs. before the cover is applied.

The new cover is also applied in the lathe. The lathe runs at its lowest speed of 10 rpm. while the glue is applied with a wooden paddle. A brush is not used because the glue cannot be removed from the brush easily after the glue hardens.

United States Rubber Co.'s U. S. Royal Industrial Adhesive No. 6134 is used. Mr. Hamrick says: "Any one of half-a-dozen glues could be used successfully, but we use this glue because we also use it to glue neoprene mounting pads under our looms. In this way, we have only one type of glue in stock."

Only a thin coat of glue is applied to the roll; 1 qt. of glue covers an average of 18 pressure rolls.

As soon as the glue has been applied to the pressure roll, the lathe is stopped. One end of a strip of pressure-roll cover is pulled from the original shipping carton, and this end is cut tapered all the way across the end and lengthwise for 8 ins.

The tapered end of the cover is applied to the end of the pressure roll at the head end of the lathe while the lathe is stopped. The end of the cover is wrapped with a 20-in. length of 1-in.-wide masking tape.

With this start, the cover is wrapped on the pressure roll at a 20 to 30° spiral angle. The lathe is run at 10 rpm. to wind the cover on the roll. The operator holds the cover medium

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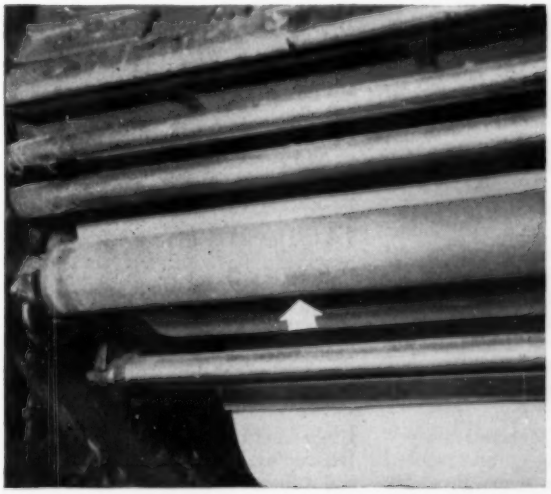


ROLL COVER (arrow) is smooth all the way across the loom after two years' use.

ROLL SURFACE is being checked for resiliency by C. H. Williams, overseer of weaving.

# 15 Checks To Inspect PURCHASED YARN

An inspection program of all yarn bought outside the mill should include—

- Examination of cone appearance
- Checks on weight, twist, and yarn size
- Test of processing qualities

By P. WIERKS, Leach Textiles Ltd.

WHEN YOU RECEIVE YARN from an outside source you ask yourself these questions: (1) Is this the yarn I ordered? (2) Did I receive what I paid for? (3) Did I buy the right yarn for the right job? A positive answer to these questions can be assured only by a systematic inspection that covers cone appearance, the yarn itself, and the processing qualities of the yarn.

## Cone Appearance

**1.** A well-wound cone shows a symmetrical pattern of yarn layers that are undisturbed from top to bottom. The sides of this cone give the impression of a straight diagonal line without hills. The yarn below a fault formed by such a hill would, during overhead unwinding, be subject to high tension and friction.

**2.** The yarn at the top and bottom of the cone should lie in true circles. Ends protruding over the top or bottom surface and crossing other circles are likely to break when unwound at high speeds. The top of the paper tube should be visible. An overrun cone will not unwind smoothly at the end.

**3.** Handling, packing, and transport are not always done with the necessary care cones require. Yarn rubbing and small cuts where the cones have hit a sharp edge are readily noticeable at the top and bottom edges.

**4.** The cone should be firmly wound. Too-soft cones hold less yarn and affect the efficiency of the next process. In severe cases the yarn will unwind in bunches.

**5.** Cone weight can be important in special cases such as when an order for a creel calls for 50 ends to be covered by 50 lbs. of yarn. This lot must be ordered on 1-lb. cones to avoid splitting the cones.

## Yarn

**6.** Inspect actual weight of the yarn against the invoice weight to guard against human errors. Bookkeeping and shipping are done by different people, and a hastily written 7 can often pass for a 9.

**7.** The scale weight is affected by moisture content and could be wrong due to the testing procedure at the shipping point. The difference between scale weight and actual yarn content can be a high figure for a large shipment.

**8.** The yarn number must be checked carefully. Too-coarse yarns provide a loss for the mill because the fabric will be too heavy, while too-fine yarns open the door for customers' complaints.

ASTM standards allow a tolerance of one yarn number either way from standard for medium-size worsted yarns. ASTM standards for cotton yarns permit a variation of ±3%, and 5% for spun-rayon yarns.

**9.** The raw material in the yarn is the cause of one of the main price variations for yarns of the same number. The ideal way to inspect this item is a thorough analysis, but many mills prefer to investigate this point only when the raw material is believed to be substandard.

**10.** Correctly twisted yarn should have (1) the correct direction of twist, (2) the specified amount of turns per inch, and (3) an even distribution of twist. The turns per inch, measured over several 10-in lengths, should conform to the number stated on the yarn order and evenly distributed over longer distances.

Here again, ASTM standards permit a variation. Woolen and worsted yarns are acceptable when the twist does not vary more than 7.5% from package to package as well as from the specified twist. Cotton yarns should stay within a 10% limit for singles or 5% for plied yarns. A 5% variation is allowed for spun-rayon and acetate yarns.

**11.** High-priced yarns should be outstanding for evenness and appearance, while an attractive price will offset a certain lack of those features in lower grades. The yarn should be reasonably free from visual faults such as thick ends, slubs, neps, foreign waste, dirty or oily spots; and it should appear even to the eye.

**12.** Sufficient strength to withstand subsequent processes is a necessity for all yarns. A quick, manual examination will show if the yarn has at least the required minimum strength. Take about 4 ins. of yarn between the thumb and forefinger of each hand and apply a slow, steady pull by moving the hands outward. A clear cut at both breaking points without any of the components protruding is a promising sign for the absence of such faults as cracked ends.

**13.** The shade of dyed yarn must match the original sample. Although the variations between the original sample and the first shipment may not be significant, the variation between the original sample and the second shipment could be too much.

## Processing Qualities

**14.** The unwinding qualities of the cones can be accurately rated while you are checking the over-all yarn length for evenness, waste, strength, and twist. A cone can appear to be ideal on the surface but the yarn may bunch, block the tension devices, and increase waste.

**15.** Check the knots. If a too-short tail end is left, slippage might occur and cause a yarn break. Long tails cause headaches for weavers and burlers.

# Georgia Mill Men Discuss SPINNING Techniques

**The spring meeting of the Textile Operating Executives of Georgia explored many knotty problems about spinning machinery and its operation. Subjects discussed included—**

- **Umbrella creels**
- **Spinning rings**
- **Frame adjustments**
- **Synthetic aprons**
- **Antifriction rolls**

IN ANSWER TO A QUESTION on the use of umbrella creels at the spring meeting of the Textile Operating Executives of Georgia, most mills spoke well of the creels for spinning but expressed some concern over the possibility of the spinners becoming fatigued from pushing the roving boxes. Advantages of the creels were said to be cleaner roving, cleaner frames, fewer slubs, and less tangled work. No mill reported increased work assignments.

Twenty-one mills gave detailed schedules for breaking in new spinning rings. The schedules varied widely. Here are some typical reports:

**Mill A**—"For 25s and coarser yarn, we change travelers on new rings every 8 hrs. for the first 48 hrs.; then we change every 16 hrs. until we feel we can extend this cycle further. For 31s yarn, our normal traveler-changing cycle is 120 hrs. on a 2 5/16-in., No. 1 flange ring where the spindle speed is 9,500 rpm. and the traveler is 4-0 circle."

**Mill E**—"Our traveler-changing procedure is: first change 30 mins., second change 1 hr., third change 2 hrs., fourth change 4 hrs., and fifth change 8 hrs. Afterwards, we change every 8 hrs. for five days, every 16 hrs. for another five days, and follow with two 32-hr. changes.

"Next we add one day's running time to each succeeding change until there are 96 hrs. between changes. This schedule is for 16s warp spun on a 2¼-in. ring with a No. 4 traveler running at 4,600 ft. per min."

**Mill J**—"We do not cut speed, but we use travelers three to five numbers lighter than normal. The travelers while running are watched closely until they turn blue. The first change is made 5 to 10 mins. after the start. Each time a change is made, the travelers run longer without burning. Our tests show that travelers quit burning after the fourth change, or 45 mins. running time.

"The tests were made on 30s yarn spun with 4.10 twist multiplier on a 2¼-in. ring. A 5-0 traveler running 5,400 ft. per min. was used in the tests."

**Mill O**—"We break in our new rings at about one-half the normal traveler speed for a given yarn number. We change the travelers every day for two weeks and then change them every two days. Traveler weight is increased as necessary to control the yarn balloon. About one month is required to reach the normal traveler weight.

"Our regular changing schedule for 9s yarn is 72 hrs. for a No. 14 traveler running 4,766 ft. per min. on a 2¼-in. ring. Spindle speed is 7,282 rpm."

### Nylon Spinning Tape

Bonded-nylon spinning tapes in general were said to give good service without loading. However, Mill M reported that its nylon tapes load more than cotton tapes, especially at certain times of the year and when certain cottons and styles are being run.

On filling frames, the tapes are cleaned by holding a wire brush against them when the bobbin is nearly full. Frames on either side are stopped during the cleaning. Tapes on warp frames are cleaned with an air hose during overhauling.

Most mills reported that they do not change twist multiplier in spinning filling on warp bobbins for quilling, especially for coarser numbers. Two mills said that they lower the twist multiplier 0.75 on numbers finer than 50s.

Relative humidity used in spinning rooms varied widely among most of the mills. For long-draft spinning, the range is from 35% to 65%, usually about 5% lower than for regular-draft spinning in the same mill. A number of mills reported that they use the same relative humidity for both types of spinning. Preferred temperatures range from 80° to 92° F.

Five mills reported that synthetic aprons do not load; five mills reported the opposite. Those mills having trouble with the aprons said that the loading is on the underside. The loaded aprons are cleaned by scrubbing at intervals of one to six months.

The reporting mills agreed in most instances that air-suction cleaning on spinning is more effective than scavenger-roll cleaning and that it produces fewer ends down.

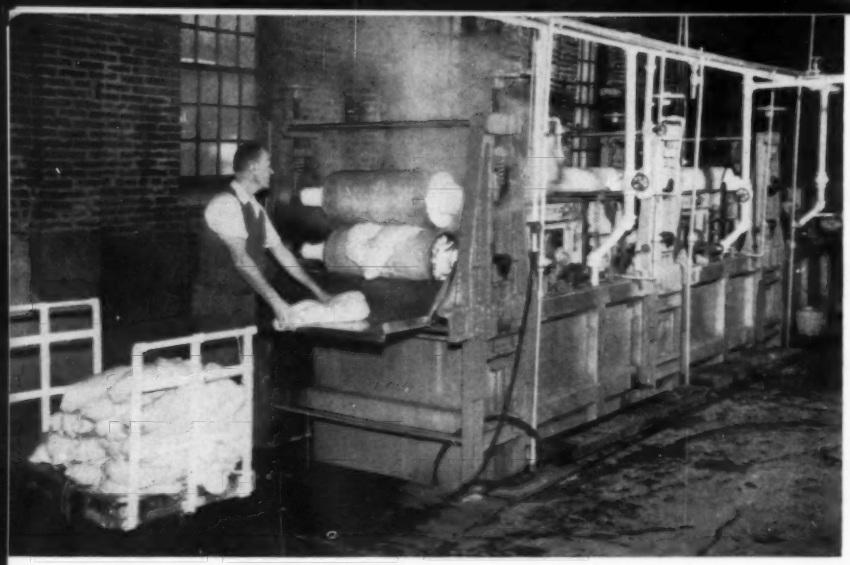
One mill cleans Pneumafil ducts on the week ends with compressed air; another mill blows out the ducts twice a week; several mills clean the intake orifices daily with a small brush. A few mills reported that spinning waste increased upon installation of Pneumafil but said that slubs and gouts decreased and yarn appearance improved.

All mills agreed that overhead cleaners produce no additional gouts in the yarn and that less-frequent blowing down is necessary where cleaners are used.

### Antifriction Rolls Liked

Eight mills discussed their experiences with antifriction spinning rolls.

CONTINUED ON PAGE 178



WOOL-SCOURING TRAIN was designed at the plant and built by Klauder-Weldon-Giles. Although short, it gives the wool a thorough scouring because of the multipass design of each bowl.

# How Waters & Sons Processes KNITTING YARNS

**• Woolen and worsted yarns for machine or hand knitting must be dyed and finished to preserve the natural hand and loft of the fiber. New equipment is helping this 65-year-old Philadelphia firm produce better yarns more economically.**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

GETTING RESULTS with high-grade woolen knitting yarns depends on the right combination of hand work and modern machines. Dyeing wool in skeins to come up with soft, lofty yarns still requires time and careful handling. You can't rush processing, and rehandling must be avoided if possible because of the effect on the bulk and feel of the wool.

D. F. Waters & Sons Co. developed its own scouring machine, which was built by Klauder-Weldon-Giles. Although the machine is much shorter than the usual wool-scouring train, the wool is guided by bar conveyors through three passes in each bowl so that the effect is equal to machines occupying much more floor space.

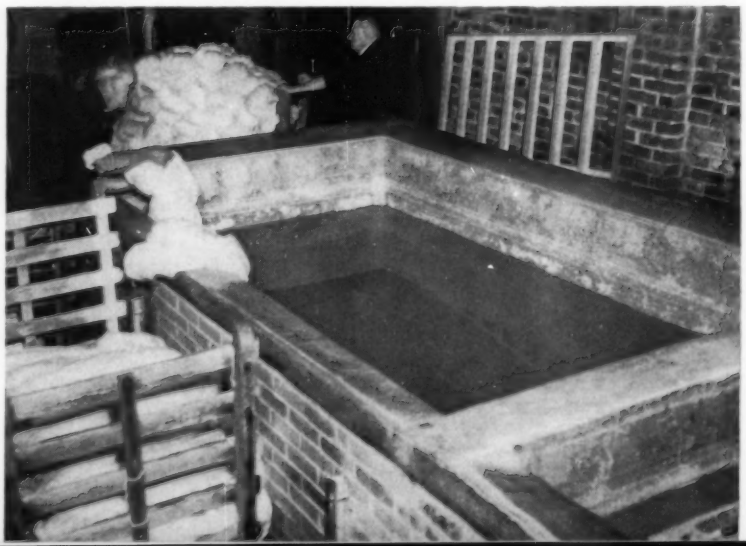
After wetting out in warm water in the first bowl, the skeins are entered into a soap-and-soda-ash bath at 110° F. Scouring is mostly a matter of removing the oils that are added to the wool so that it will spin properly. Two bowls are used for scouring; the third and fourth are used for rinsing. Each scouring and rinsing bowl is equipped with squeeze rolls to remove excess water. After this mild scour, the skeins are ready for bleaching or dyeing.

For a really good white, the wool gets a peroxide bleach followed by stoving with sulfur dioxide.

Peroxide bleaching is done in a large brick tank lined with a cement made especially for the purpose. The tank will carry 1,200 to 1,500 lbs. of wool, and the peroxide-silica solution is heated initially to 140° F. when the wool skeins are loaded in. The load is left overnight to bleach. Then in the morning the skeins are loaded on poles and transferred to smaller tanks lined with stainless steel, where they are moved about by hand in fresh warm water to remove the end products of the bleach bath.

After rinsing, the skeins are moved

PEROXIDE-BLEACHING TANK carries up to 1,500 lbs. of wool on stainless-steel grids. Wool gets an overnight steep, starting at 140° F. in the peroxide-silicate solution.



to a hydroextractor, and excess water is removed.

The hydroextracted skeins are again strung on poles, which are then hung on supports in a large stoving chamber built within the bleach house. In this stoving chamber is a pot in which a quantity of sulfur is lit. The sulfur-dioxide gas combines with the water in the skeins and forms sulfurous acid, which completes the bleaching.

The process starts at about 6 p.m. The sulfur smolders for 5 to 6 hrs., and at 3 a.m. dryers built into the stoving chamber are started. A stack exhausts the fumes to the outside, and by 7 a.m. the load of wool is completely bleached and dried.

### Machines Dye Bulk of Yarn

Most of the quarter-blood and zephyr yarns that go to machine or hand knitters are dyed in Klauder-Weldon-Giles machines. The yarn is suspended on square stainless-steel bars mounted around the periphery of a large reel that revolves in a stainless-steel tub. The lower end of the skeins is slipped over a round bar placed so that the skeins cannot get tangled. As the reel revolves in the liquor, the square bars are advanced 90° in each reel revolution so that the yarn is evenly exposed to the dye. The entire machine is covered and has a retractable panel for loading and unloading the yarn.

Up to 500 lbs. of wool yarn are loaded into the machine, and water is run in to the proper level. Dyes will vary with the shade; but chrome dyes, acid dyes, or metachrome colors are all used.

The dyes and mordants are added at the back of the machine through a dye-feed tank-and-pipe arrangement that distributes the color evenly. Steam is turned on and the temperature raised at the rate of about 2° F. per min. until the bath is at a boil, which will require about 45 mins. After 30 mins. at the boil, the yarn is checked for shade and adjustments made if necessary. Dyeing is continued at the boil until the shade is matched. Then the bath is cooled and the yarn taken out and hydroextracted before drying.

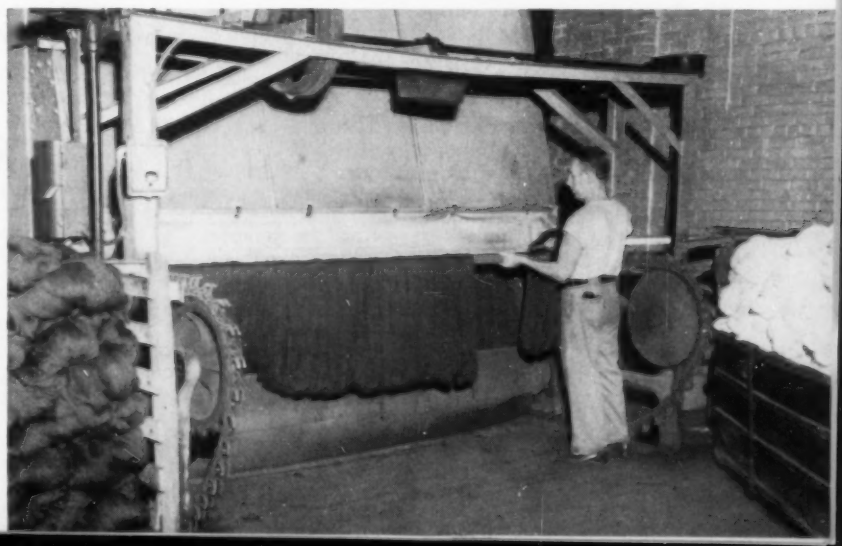
Drying wool or worsted yarn in skeins calls for relatively low temperatures if the hand and loft of the yarn are to be preserved. The D. F. Waters plant uses a single-pass dryer. The yarn is conveyed on wooden poles through the dryer, requiring 1 hr. at 200 to 205° F. to dry.

After drying, the skeins are carefully examined, made into lots, and packed for shipment. The plant is also equipped to wind the skeins onto cones or other packages for weaving or knitting.

**WOOL AND WORSTED YARNS** are dyed in these Klauder-Weldon-Giles machines carrying 500 lbs. per load. Skeins are supported at both ends to reduce stretching or tangling.

**HAND RINSING** after peroxide bleaching insures complete removal of bleach-bath residues. Similar tubs are used for the actual dyeing of wool-fur blends.

**SKEIN DRYER** is a single-pass type with a conveyor to carry the skeins. Temperatures are kept at 200 to 205° F. to dry without making the wool harsh.



SAMPLES are taken from the raw material and tested in the laboratory. Stain tests determine the fiber content.

CLIPS of soft material are laid out in a batch on the floor and fed to the picker. Only new clips and thread waste are used at Lobsitz.

# GARNETTING WASTE
## At Lobsitz Mills

**• Practically every type of textile material is processed into garnetts for yarns, batting, filling, and nonwoven fabrics. Four departments are used to keep fibers from getting mixed, and care is taken to keep the staple length of fibers as near as possible to the original stock.**

**By GUSTAV ZELLNIK,** Consulting Editor, TEXTILE WORLD

DURING THE LAST TWO YEARS, Lobsitz Mills Co., Nutley, N. J., has undergone a complete reorganization. The entire plant layout has been changed and new machinery installed to increase efficiency and to prevent mix-ups of all the various natural and synthetic fibers that the mill processes.

The plant has been divided into four separate departments: (1) wool, (2) rayon, (3) nylon and Dacron, and (4) acrylic fiber. Each department has its separate warehouses and machines to avoid mix-ups.

Lobsitz Mills also has a wool-scouring division to process raw wool and mohair. The scouring department includes a bleaching and carbonizing unit.

Only new waste, such as thread waste and new woven or knitted clips, is processed. To make the content of each bale or bag visible, each department has different-colored tags. Tags of different sizes are used in the nylon and Dacron department to identify the two fibers.

### Samples Are Checked

When the threads, clips, and loose waste enter the receiving warehouse, a large sample is taken from the shipment and sent to the laboratory, where it is compared with the purchasing sample. If the sample is standard, it is checked with the purchased-material description.

These samples are treated for 10 mins. at 220° F. with identification stains. If the material is up to standard, it is weighed, tagged, and stored until required.

Each department has its own openers, pickers, garnetts, or cards. The end use of the stock determines the machines for processing the material. Different settings of the various machines are determined by the type of stock. Lags on the pickers, for instance, have various shapes, points, and teeth for different materials.

The hard material is first put through a shredder to preserve the fiber staple. To get the hard-twisted fiber well opened, it is put through a multicylinder picker to gradually open the material. Each picker is connected to a lumper where the unopened or partly opened threads or clips are collected and taken back to the picker for a second run through the machine.

### How Fiber Is Treated

To get a good staple, the material is sprayed with emulsion and aged before opening. A batch of material is laid on the floor, and each layer is sprayed with emulsion to get proper penetration. The material lays on the floor for 18 to 24 hours. The emulsion softens the fiber and helps prevent the staple from tearing in subsequent processes.

Wax is used on nylon and Dacron to prevent fusing and to act as an antistatic agent. Twice as much oil is used on wool as on rayon. Wool requires three times as much oil as acrylics do.

Loose waste is dusted before processing on the cards. Soft threads and clips are put through the picker with a cylinder speed of 500 to 600 rpm. and then garnetted or carded, depending on the end use.

The picker cylinder speed for medium-hard material is

OPENED MATERIAL is frequently taken from the three-cylinder garnetting units to be checked in the laboratory for grade and staple.

| Material | National Aniline A.H. |
|---|---|
| Wool | Red |
| Cotton | Dark green |
| Acetate | Yellow |
| Viscose | Blue |
| Dynel | Olive |
| Nylon | Orange |
| Dacron | Light lime |
| Orlon | Oyster |
| Acrilan | Taupe |
| Vicara | Maroon |
| Silk | Dark brown |

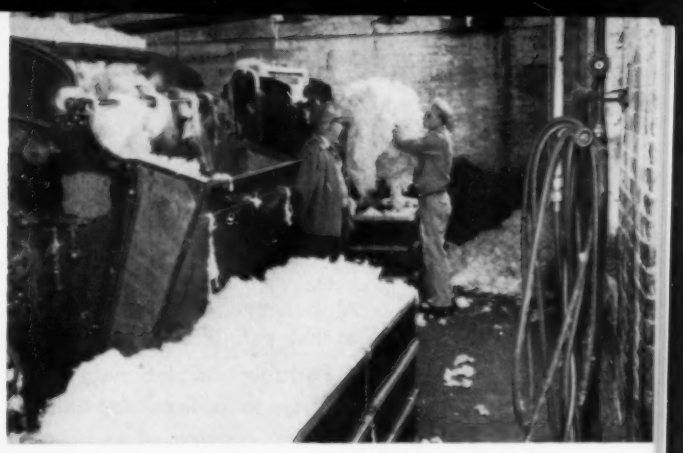
DIFFERENT MATERIALS are identified by these colors after a 10-min. treatment with an identification stain at 220° F.

| Material | No. of teeth | Teeth shape |
|---|---|---|
| Soft clips and threads | 4,500 to 5,500 | Flat nail-head pins |
| Medium-hard | 7,500 to 9,000 | Nail-head round needle-pointed pins |
| Hard-twisted | Up to 12,000 | Flat straight-head needle-pointed pins |

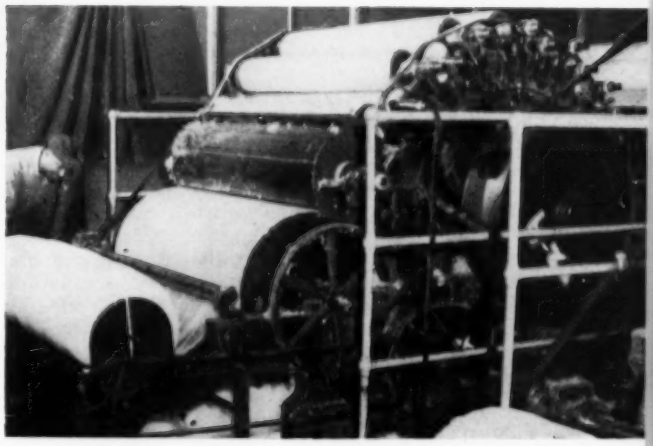
LAGS on the pickers have various shapes, points, and teeth according to the type of material to be processed.

| Material | Emulsion |
|---|---|
| Wool | Saponifiable mineral-base oil |
| Nylon and Dacron | One part wax with 99 parts water |
| Rayon | Oil to decrease flammability during picking |
| Orlon and Acrilan | Very light saponifiable mineral oil |

EMULSION is used to soften the fiber and reduce fiber breakage. The material lays for 18 to 24 hrs. after spraying.



WOOLEN CARDS are used to make the stock into batts for filling after the material has been opened on the pickers.



BATTS for filling are removed from the three-cylinder card. The various fibers are kept separate and processed in four departments.

700 to 800 rpm., and the speed for hard-twisted stock is up to 900 rpm. Hard-twisted stock is further opened on a three- or five-cylinder garnett after picking.

When mixed colored stock arrives at the plant, the material is sorted by colors. If sorting colors proves too expensive, the material is used for mixed colored stock or it is stock-dyed to a color that depends on the average shade.

### Blends Are Picked Twice

Where blended materials are required, such as wool-Orlon or wool-nylon blends, the various stocks are taken to the blending department, where the opened stock is laid down in a batch and put through a blending picker twice to insure even distribution of the various fibers.

When the garnetts are blended with virgin stock, the loss of the picked or garnetted stock must be held to a minimum. The yield of yarn is influenced by too much fall-out of the reprocessed stock if the fiber loss is too great. In some cases, high-grade reprocessed stock is preferred to low-grade virgin stock.

When all material is fully opened, pipe lines transfer it to the baling room, where the stock is made ready for delivery. These garnetts are used not only for woolen yarns but for batting, nonwoven fabrics, and filling for pillowcases and comforters.

# Alabama TOE Shoots for Better WEAVING

**Alabama mill men examined four important phases of weave-room operation at their spring meeting to keep practices up to date. The practices involve—**

- **Portable and stationary warp tying**
- **Nylon loops to tension filling in shuttles**
- **Loom and weave-room cleaning**
- **Ways to make better cloth**

RESULTS OF THE WEAVING SESSION of the Alabama Textile Operating Executives show that men at 22 mills are improving weaving by checking on four weave-room practices. They are considering the possible advantages of replacing stationary tying-in machines with portable machines, and they are testing monofilament nylon to replace shuttle bristles or to replace both bristles and fur.

They are also improving weaving by keeping looms and buildings clean. For better-quality cloth, they schedule maintenance and inspect cloth at the looms constantly.

### Is Portable Tying Best?

Tying-in machines received the most interest of the four subjects discussed in the weaving session. The trend is to replace stationary tying-in machines with portable machines. A couple of mills have tried to make the change and have not been successful. They have some pretty strong opinions on the subject.

But 13 mills have changed to portable tying with the following results: (1) less downtime at the looms, (2) increased shuttle life and reed life, (3) lower tying cost, and (4) less damage to harnesses and drop wires.

The objections of two mills to portable machines is that they have more downtime at the loom. When several warps run out at once, for example, the looms have to stand until other warps are tied. The downtime for a warp-out at one of these two mills is 35 to 40 mins. on stationary machines. The downtime on portable machines on the same styles of cloth is 2 hrs.

### Machine Takes Up Slack

But another mill has overcome this disadvantage by having a floating machine to help when several warps are out at once. This mill has a stationary machine and several portable machines. All portable machines except one are assigned to a given area of the weave room; each machine ties yarn numbers within a given range. The floating machine is set up to tie all types of warps and is shifted to any area where several warps are out at once.

Another mill reported that its downtime on portable machines is only one-third the downtime of stationary machines.

Most mills agreed, however, that stationary machines generally have a time advantage on warps with two to six harnesses; portable machines are faster on warps with more than six harnesses.

Details of mill reports are:

**Mill A**—"We are using both portable and stationary tying-in machines. We can comb patterns straighter with the portable, and there's no difference in the amount of waste made by either machine.

### Clean Looms First

"At warp-outs for tie-backs, we blow the loom off just as we do where patterns are taken out of the loom. The loom is oiled and greased before the warp is retied.

"In preparing warps for tie-backs, we get best results by unhooking the jacks from the treadles, leasing the pattern, and then brushing the pattern before it is tied."

**Mill B**—"We are able to comb patterns as straight on portable machines as on stationary. We have less waste on the portable.

"We use the same methods for cleaning looms on both tie-backs and lifted-out patterns. The pattern is cleaned in the loom with compressed air just as a lifted-out pattern is cleaned in the tying-in room. We have a man to lease out patterns and lay in new warps ahead of the machine operator."

**Mill C**—"The only procedure we have been able to use to lease out patterns for portable tying with good results is to use lease rods. We use blocks of wood with notches cut for the warp stop-motion electrode bars. The wood blocks raise the electrode bars while we put the lease rod in the sheets of yarn."

### Correct Tying Methods

**Mill D**—"We comb a pattern just as straight with portable machines as with stationary. The total warp waste in pounds is approximately the same on both types of machines. We clean looms at tie-backs with an air hose.

"For best results in tying warps on looms with portable machines, we use the following method:

"1. We get a good lease on the pattern at the loom by using two lease rods; we lease the pattern with a 1x1 lease. In this way, the lease is straight.

"2. We start at the slasher to prepare the warp to be tied. First we put a strip of cellophane tape on the warp about one round from the end. The tape holds the pattern straight for the tying-in machine.

"3. When we put the warp in the loom, we pull the warp around the whiproll and fasten it with clamps about 10 ins. behind the tape. Then we pull the warp over the machine so that the tape just passes over the ribbon on the machine. We put the back insertion bar in. And finally we brush the warp just enough to straighten the ends.This procedure gives an almost perfect pattern."

### Portable Tying Is Cheaper

**Mill E**—"We have gradually discontinued stationary tying because portable tying is less expensive and there's less damage to patterns, harnesses, drop wires, etc.

"We do very little loom cleaning at warp-outs; we clean our looms constantly, and they don't need cleaning

at warp-outs. Therefore we avoid soiling the cloth on the loom and save from 1 to 1½ yds. of cloth at each warp-out.

"We use this procedure to tie warps at the loom: (1) the lease-out man leases the pattern end-to-end and removes the empty yarn beam; (2) a tying preparation man places the full beam in the loom and combs the warp on the tying frame; (3) the tying-in man sets the machine head on the frame and ties the warp; and (4) the lease-out man returns to the loom, removes the tying frame, and pulls the warp over."

### 14 Mills Test Nylon Loops

Several mills have different opinions of the value of monofilament nylon for tensioning filling in shuttles. A total of 14 mills are using or have used nylon loops to replace bristles or fur. Seven of these mills found nylon unsatisfactory, and seven mills are still using nylon or experimenting with it.

One of the greatest disadvantages of the nylon loops is that the two front loops in the shuttle burn out or melt at high loom speeds.

Typical mill reports are:

**Mill A**—"On heavy weaves, our experimental results with nylon loops have been good. Cloth quality is improved because we have fewer mispicks and broken picks.

"On 8s yarn, we run 40-lb.-test nylon; on 12s, we use 30-lb.-test. We install the nylon loop in the shuttle at a smaller angle than a bristle is installed. The loop reaches the end of the brass on the quill tip.

### Nylon Loops Are Cheap

"The nylon loops last as long as bristles and are much cheaper; it costs only 1½ to 2¢ to replace the nylon in a shuttle."

**Mill B**—"We have been using monofilament nylon on 249 60-in. Draper XP looms about three months. The looms are weaving ticking with 68 to 103 warp ends per inch and 34 to 66 ppi. The warp ends are 14½s to 20s; filling is 10s to 20s cotton and rayon.

"The nylon gives more-even tension on the filling, and there's less balloon in the shuttle. Consequently there are fewer filling breaks and fewer loom stops caused by the filling hanging on the filling stop motion. Both cloth quality and loom efficiency are improved.

"We use 40-lb.-test nylon. We place a 3-in. strand of nylon that forms a 1½-in. loop at a 45° angle in the shuttle. Three loops are placed in each side of the shuttle about 2 ins. apart. The first loop is placed in the eye end of the shuttle and is positioned so that the end of the loop touches the end of the quill at the first notch on the quill.

### How To Install Loops

"To place a loop in a shuttle, we bore a $\frac{1}{16}$-in. hole $\frac{1}{4}$ in. from the bottom of the shuttle and another hole $\frac{1}{4}$ in. from the top of the shuttle. One end of the loop is put in each of the holes and is fastened to the shuttle with a round toothpick.

"We run an 8¾-in. quill with a 1⅝-in. filling package. The nylon friction lasts about twice as long as horsehair bristles and fur.

"But the first two loops near the tip of the quill burn out or wear out in about a week, running two shifts. Now we use two horsehair bristles in the front of the shuttle and use nylon for the other loops. This arrangement is very satisfactory."

### Use Both Fur and Nylon

**Mill C**—"We have 600 looms running with 0.045-in. loops of nylon. The nylon replaces the bristles, and we are still using fur. The nylon lasts two to three times longer than bristles."

**Mill D**—"Using nylon to replace bristles and fur has not been satisfactory with us. We used 25- to 50-lb.-test nylon and installed the loops at every possible angle—vertical, horizontal, and full length of the shuttle.

"Our cloth quality was lowered, and we had more mispicks and broken picks. We also had approximately 1% more loom stops."

**Mill E**—"At one time, we had nylon loops in more than 1,500 looms to replace bristles and fur. The loops increased broken picks, kinky filling, and false filling-fork stops."

### Keep Weave Rooms Clean

Most of the 20 mills reporting on their methods of cleaning looms blow off their looms at least once each day. Overhead areas are cleaned as frequently as once every day to once every five weeks. Lights are usually blown down when ceilings are blown down. In addition, lights are washed periodically.

Cleaning methods by mills are:

**Mill A**—"Looms and ceilings are blown off each day. We also wash fluorescent light fixtures with soap and water periodically. One crew of cleaners blows off looms with warps. Each man blows off 192 looms per shift. Another crew blows off looms at warp-outs and oils looms."

**Mill B**—"Our weave-room floor is swept with brooms each day and is buffed and waxed regularly with the Tennant system. Ceilings, posts, and windows are cleaned with brooms. Lighting fixtures are wiped with cloth regularly and are taken down and scrubbed occasionally. Air-conditioning ducts are wiped by hand with a cloth by schedule.

"A loom cleaner on each shift wipes the reed caps and harnesses with a cloth and blows off the looms on a regular schedule. To clean looms at warp-outs, we spray them with a cleaning fluid. Then we blow them off with compressed air."

### Clean While Looms Run

**Mill C**—"We blow lint from the ceiling and air ducts once a week and wipe off the lighting fixtures once a week. This work is done while looms are running.

"Loom blowers blow off all looms every 24 hrs. They blow off the looms while they're running, and each man blows off 202 looms per shift.

"Harness cleaners clean the harnesses and reed caps once every 24 hrs. Each man cleans 160 looms per shift.

"A loom cleaner cleans and oils about 18 looms per shift.

"Each loom receives 7 mins. of cleaning each day, or 0.116 manhours of cleaning."

**Mill D**—"We cover groups of looms with paper and blow off the ceiling, lighting fixtures, and humidity system once a week. Lights are taken down and washed once each year.

"At the beginning of each shift, each loom cleaner cleans the filling racks on 80 looms. Then he blows off 80 looms. He also cuts threads from take-up drive shafts, takes down bad filling, and cleans about three looms each day with a chemical cleaner. The chemical cleaner makes the looms blow off much cleaner. Each loom is blown off every 24 hrs. and receives a total cleaning time of 0.31 manhours."

### How To Weave Good Cloth

All mills reporting on quality control have strict control methods, nothing is left to chance. Looms are inspected thoroughly, and imperfectoins are corrected at warp-outs. All key weave-room employees inspect cloth at the loom. Looms are checked rapidly and corrected when seconds reports come from the cloth room.

**Mill A**—"To keep cloth quality high, weavers check the cloth constantly. Smash hands inspect the cloth on all looms twice each day. Loom-fixers and second hands make periodic checks.

"In addition to constant cloth inspection, we have a system for inspecting and checking looms. We look for improper settings and worn or defective loom parts so that corrections can be made before trouble occurs.

"When bad cloth is found in the cloth room, weave-room supervisors

CONTINUED ON PAGE 172

# How Ivey Produces COMBED YARN For Printed Fabrics

**The management of Ivey Weavers, Inc., Hickory, N. C., says that cleanliness and manufacturing know-how are the keys to good carding, spinning, and weaving. At this mill—**

- **Ceiling cleaners over cards lowered nep count**
- **Roving-frame cleaners reduced ends down**
- **Ceiling, frame, and floor cleaners improved yarn evenness**
- **Traveling loom cleaners reduced cloth-room seconds**

**By WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

THE STORY OF IVEY WEAVERS, Hickory, N. C., can be summarized in three brief statements:

1. Premium-quality combed gray goods woven by the mill usually sell for premium prices.

2. Good carding and spinning practices, with emphasis on cleaning, are largely responsible for Ivey's success.

3. Less than 1% seconds are made in the weave room.

Weekly production of fine combed lawns, sateens, blouse goods, dress goods, drapery fabrics, and handkerchief materials is around 125,000 yds. The cloth is woven from 40s to 65s combed yarn spun from high-grade Delta cotton with an average staple length of 1⅛ ins.

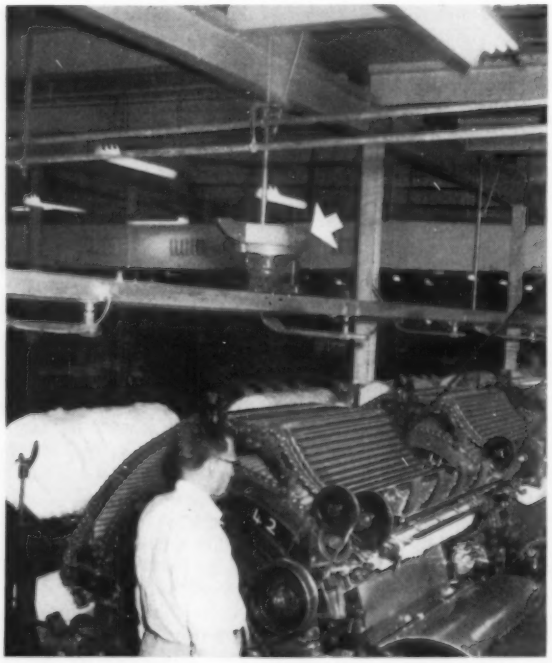
Opening and picking equipment, while in good condition, will soon be replaced with more-modern machinery. The present single line of equipment turns out a 47-lb. lap every 6 mins.

The laps are placed on 42 late-model H&B cards producing 7½ lbs. of 50-grain sliver per hour. A few years ago, according to Superintendent H. J. Spry, this mill would not have carded faster than 4 lbs. per hr. to make the same class of goods.

Clean-Align drafting. Drafts are 20 to cylinder speed of 165 rpm., but settings are closer than conventional. After much experimentation with the cards, the mill set up operational standards that produce fewer than 10 neps per 100 sq. ins. of web. Sliver variation at the cards is low.

Fillet clothing, used on all cards, is always kept sharp. Maximum grinding time is 4 hrs.; but the grinding interval is shorter than in some mills.

About a year ago, Parks-Cramer ceiling cleaners were installed over the cards, and the ceilings have not been cleaned since. The cleaners help make possible a work assignment of 42 cards



**OVERHEAD CLEANERS** (arrow) **in the card room keep ceilings clean and reduced nep count.**

**SLIVER CANS, used with the five-roll breaker drawing, are 14 ins. in diameter.**

per operator. The cards are belt driven.

Following the cards are two Saco-Lowell lap machines, 20-ends-up, which make 1,000-grain laps for the breaker drawing. Breaker drawing comes ahead of combing in this mill because the management believes that parallelization of the fibers at this point produces more-even yarn and is easier on the comber needles. The five-roll drawing drafts 16 and puts a 42-grain sliver into a 14-in. can.

After the first drawing process, there are seven Saco-Lowell Model 50 combers producing 35 lbs. per hr. each. The combers have three-over-four draw boxes.

COMBERS, producing 35 lbs. per hr. each, are located between the two drawing processes.

### Sliver Variation Is 12%

The second drawing process, consisting of six three-over-four Saco-Lowell frames with four deliveries each, comes after combing. A 48-grain sliver is produced with an average variation of 12%. The sliver at this point is put into a 12-in. can.

Old three-process roving, with a draft of 4, 5, and 6 respectively, was replaced a few years ago with eight new Whitin Super-Draft 136-spindle frames and four H&B High-Draft frames. Draft on these frames ranges from 23 to 34.

The present frames, producing 4.00- to 6.00-hk. roving, operate basically at standard speeds. For example, a frame on 4.00-hk. roving has a front-roll speed of 122 rpm.; on 6.00-hk. roving, front-roll speed is 97 rpm.

The roving frames are not equipped with automatic stop motions because the management does not believe there are enough ends down to justify the cost of installation. The frames have Parks-Cramer overhead traveling cleaners.

In the spinning room, there are 16,560 spindles of long-draft Whitin and H&B spinning.

Last year, 16 new Whitin F2 276-spindle frames were installed to spin filling. The frames have 3-in. gauge, 1⅜-in. rings, roller-bearing spindles, and Clean-Align drafting. Drafts are 20 to 25.

Warp yarn is spun on 44 H&B four-roll frames installed in 1949. These frames are being equipped with SKF HM2–19 roller-bearing spindles and aluminum sleeves for 8⅝-in. tapered paper tubes. Spindle speed is 9,600 rpm. on 40s to 60s yarn. Other specifications include a No. 1 tube fit, 1-in. whorl, 7½-in. traverse, and 2-in. rings. Draft is 20 to 25. Uster evenness averages 16%. These changes permitted 100% more yarn to be put on the bobbins.

The spinning room has been equipped with multiple-nozzle Parks-Cramer combination ceiling, frame, and floor cleaners.

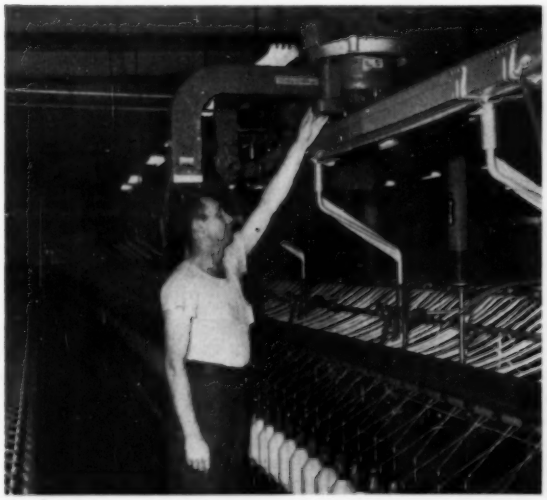
### Wind 4-lb. Cones

In the winding department, two Universal Roto-Coners, with slub catchers set at 0.010 in., produce 4-lb. cones.

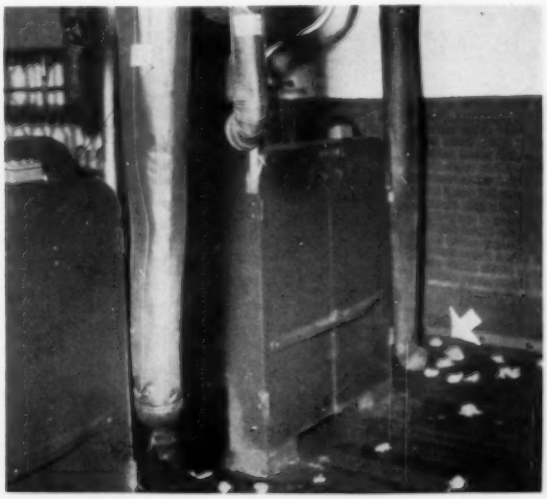
Warp beams, made on a Cocker warper, hold an average of 40,000 yds. of yarn; and there are seldom more than two or three stops per beam during the 3-hr. running time.

Installation of mechanical cleaners

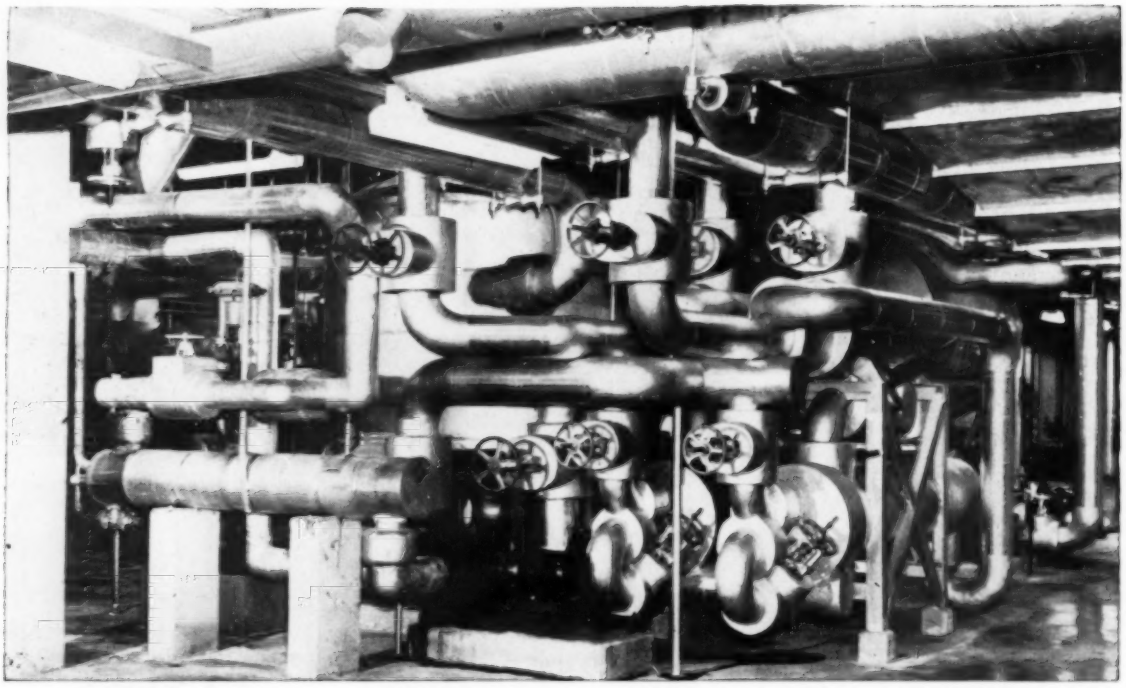
CONTINUED ON PAGE 190



ROVING-FRAME CLEANERS reduced ends down and cleaning costs in this room.



FLOOR SWEEPER blows cotton on spinning-room floor to suction pickup (arrow) along one wall.



PATTERSON-KELLEY heat exchangers in this installation pick up heat from condensate of dyeing machines to heat water for processing.

# Coats & Clark Saves WATER and FUEL

• Coats & Clark's new thread-finishing plant at Toccoa, Ga., is engineered to conserve water and steam at every possible point of use. To reduce water and heat costs, the mill uses heat exchangers, a cooling tower, and a 1,000-ton refrigerating system.

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

When Coats & Clark engineered its Toccoa, Ga., finishing plant, it arranged to save both water and steam and to recover 97% of the caustic washed out of yarn being mercerized.

Normally, finishing plants don't worry too much about saving water; but Coats & Clark buys its water from the City of Toccoa and is interested in keeping water costs low. Daily consumption is in the neighborhood of 1,200,000 gals.; it could easily be substantially higher without reuse of much water that flows through the finishing plant.

Water is used in this plant for four primary purposes: mercerizing, dyeing, bleaching, and refrigeration. Boiler feed is for the most part an entirely separate system from the interconnected processing water set-up.

The processing water is usually too hot or too cold to suit any particular situation at any given time; so it must be cooled or heated. Whether water shall be pumped to the cooling tower or sent through a heat exchanger to recover heat before going to waste depends on the frequency of the operation, the water temperature, and the amount of water involved.

Take caustic dilution. Coats & Clark buys 73% caustic, dilutes it with 12% caustic from the dialyzers rather than water, and pumps it to storage. Heat-of-solution temperatures run to 250° F.; so the 50% caustic is pulled down to 100° F. by running it through a nickel heat exchanger. The water that is used to cool the caustic goes to waste because the operation is infrequent and lasts for only 5 to 6 hrs. at any one time.

But in the yarn-preparation section of the mercerizing range [Textile World, April, '55, p. 114] about 50 gals. per min. of very hot water—180 to 190° F.—overflows to a heat exchanger, where it warms incoming cool water that has been used to cool the yarn just before it enters the first mercerizing section of the range. This overflow then goes to waste. A small booster heater supplies enough heat to keep up the system temperature to the required values.

### Cooling Tower Saves Water

The cooling tower is of conventional spray-and-baffle type, equipped with a large fan. It can handle 3,500 gals. per min. of water. Approximately 650 gals. per min. of this water has been heated in exchangers located on package-dyeing machines, the mercerizer caustic cooling system, and other sources. Cooled water from the tower returns to be used again in these exchangers for cooling-off purposes. If outside temperatures get too high, the refrigeration system can be cut in to meet the requirements of the bleaching and mercerizing operations. Normally, the refrigeration system is not needed in the winter.

The package-dyeing machines are provided with hot water at 180° F. Condensate produced in bringing this hot water to 240 to 250° F. for the dyeing process is led through heat exchangers to make more hot water.

Probably the most efficient use of steam and water in the entire plant is found at the caustic-recovery unit.

A three-effect evaporator with auxiliary equipment converts all waste water from the mercerizer from 10% NaOH to 40% NaOH in a continuous process. By leading the vapors from the evaporators through a surface condenser and heat exchanger, process hot water is produced at 180° F. The vacuum pulled by the condenser helps lower the boiling point of the wash water so that the actual heat loss after the system gets rolling is only about 5%.

### Water Purity Watched

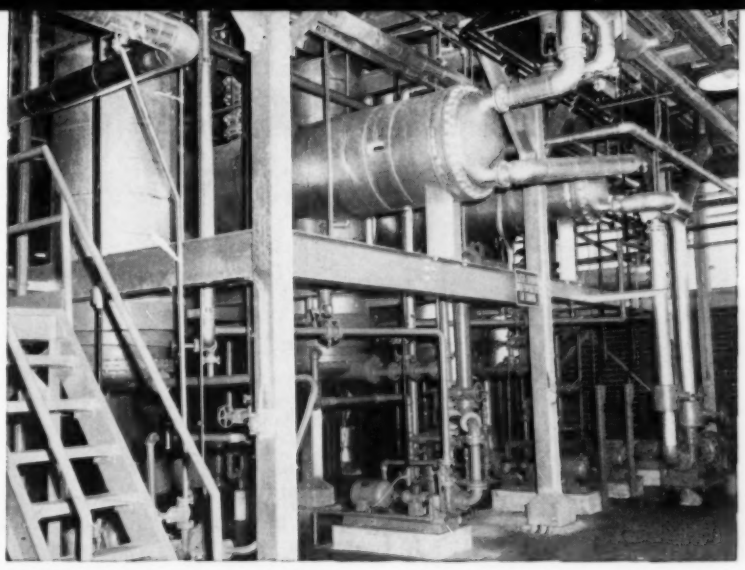
Because the hot water produced in the caustic-recovery system would be subject to contamination in the event of heat-exchanger failure, conductivity cells are used to check the water that circulates in the shells of the heat exchangers. Thus, if a tube should rupture, conductivity of the process water outside the tubes would rise and the conductivity control would (1) dump the process water to waste, (2) signal the operator, and (3) indicate the extent of contamination.

About ¼ of the 40% concentrated caustic is put through the dialyzers. A portion is continually returned to the wash waters being evaporated, some goes to dilute the 73% caustic bought for make-up, and the balance is used to make sodium hypochlorite for bleaching. Of the caustic dialyzed, about 10%, loaded with impurities, is run to waste.

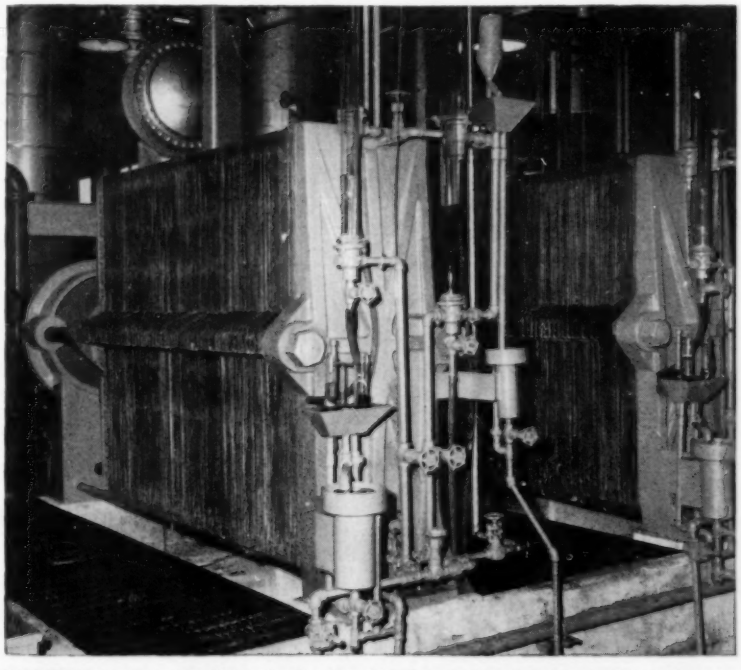
The yarn-dyeing machines are set up with heat exchangers that serve a double function. To heat dyeing liquors, steam led through the exchangers boosts the 180° F. hot water to the required dyeing temperature. Condensate from this operation goes to the waste heat-recovery system.

During dyeing it is necessary to cool the yarn and the machine; so cooling water from the tower is run through the heat exchanger. A temperature drop of 5 to 6° F. per min. can be obtained this way. The older method of spraying down the dyeing machines from the outside took at least three times as long. Water used to cool the machines goes back to the cooling tower—another case of saving water rather than heat units.

By installing what at first glance appears to be a complicated system of water, heat, and caustic recovery, Coats & Clark is realizing very considerable savings in water and steam costs and also stepping up production.



**THREE-PHASE** evaporator system is used to reconcentrate wash water from the mercerizer. Heat exchangers and a surface condenser make the recovery of caustic economically practical. Heat loss in the system is figured at 5%.



**DIALYZERS** remove sugars, lint, and other impurities from reconcentrated mercerizer wash water as it passes through parchmentized paper filter elements. About one-third of the 40% caustic is dialyzed; the balance goes directly to storage. Dialyzed caustic, which averages 12% NaOH, is used for making chemic and diluting strong caustic. A portion flows into wash water for reconcentration.

# Sewing-Room PIECE RATES Should Be Set Scientifically

In sewing rooms, piece-rate setting the scientific way involves—

- Careful study of your work
- Surroundings of your jobs
- Each job itself
- Determination of fair earnings
- Setting of fair production

**Emphasis on these points has been placed on sewing operations, but the same principles hold for many other textile operations.**

MANY MANUFACTURERS today are faced with problems in rising costs because of new styles, new fibers, and growing wage pressures. These advances in costs can be met by engineering work methods and payment and the scientific setting of piece rates.

Plants that set piece rates by rule-of-thumb methods throw away substantial savings that often amount to 20% or more of the direct-labor costs.

Production men briefly review the new or changed job, perhaps make some improvements, and then set piece rates based on judgment and past experience. This method often freezes work methods at a low level of productivity and freezes the direct-labor cost at a high level.

The rule-of-thumb rate setting adds 10% to the proper direct-labor cost. The failure to investigate and apply new methods and use improved machines, work aids, attachments, and other devices also adds to the excessive cost of rule-of-thumb piece-rate setting. The figure may amount to 20% or more in abnormal direct-labor costs.

### Analyze the Work First

Scientific rate setting starts with an analysis of the work done. Grouping of work based on relatively similar constructions reduces operator switching. This construction analysis and grouping, aligned with sales needs, determines the general plant layout.

Study the work and analyze the methods surrounding each job. Direct bundle flow with work storage among individual machines, rather than a pretzel-shaped flow with the storage along the walls of the old-fashioned group-drive plant, moves work swiftly and economically and simplifies supervision. The movement among the machines may be by special truck with untied bundles or with a minimum of indirect-labor service for tied bundles.

Where a number of styles are involved, group the individual machines in batteries so that several families of goods are turned out at the same time. This system reduces operator switching, raises productivity, simplifies shipping, and reduces inventories.

The way in which garments are assembled and the correction of the flow in the plant are the first steps in sound and scientific rate setting. Costs are lower because operators lose little time in getting their work and in tying and untying bundles, and there is little switching from one work to another.

The jobs are then developed. Begin with the basic method that best applies to each situation. The coupling of a special sewing-machine motor that automatically stops your machine with the needle out of the cloth when it finishes a seam saves work because the operator can keep both hands on the garment.

Table extensions aid in positioning fronts and pockets. Small positioning trays at the machine simplify the sewing of labels. Final examination at the last operation sharply reduces mending costs.

### Consider Work Motions

After studying the job itself, consider the operator's work motions. Does the garment come to the operator in a form most easily used? When she picks up the garment, does she grasp it properly so that it moves easily to the needle? How does she stack her garments and bundle them? Can this work be performed more simply? The answers may point to a need for retraining.

When these studies have been made, rate setting can be tackled. Setting of piece rates, for people of adequate skill, can be expressed in this equation:

$$\frac{\text{expected earnings at average effort}}{\text{expected production at average effort}} = \text{piece rate}$$

When you talk of a piece rate, you actually speak of two ingredients: the earnings you expect your people to receive and the production you expect them to give you for those earnings. We find that for one job, under certain conditions, the equation is:

$$\frac{\$1.40 \text{ per hour}}{4 \text{ doz. per hour}} = 35¢ \text{ per doz.}$$

Scientific rate setting then determines what you want your people to earn per hour and what is a fair production per hour with the methods and conditions existing at the time of the rate setting. Dividing the two gives you the piece rate.

As far as the operator is concerned, if she earns her acceptable wage of $1.40 an hour for fair effort, she has no complaint about the piece rate. If 4 doz. is a fair and reasonable production for $1.40 an hour, you have no complaint on costs, assuming there is no make-up loss.

The fact that piece rates are the result of earnings divided by production is forgotten when rates are set by comparison, past experience, or vocal pressure. Too often, we find that one job is judged harder than a previous similar job.

### High Rates Remain High

Judgment and pressure are poor yardsticks, and so the price is set at either a high or low level. If the rate is set at a low level, it usually rises to something near the proper level under worker pressure. However, high rates tend to remain high. The average is a level that is excessive. Unscientific

CONTINUED ON PAGE 174

*From a paper by Bertrand Frank, Bertrand Frank Associates, Inc., at the 1956 annual meeting of the Knitted Outerwear Association*

MASTER CONTROL CLOCK is adjusted as instructions are received as to the future working conditions in the dyeing and boarding rooms.

# How STEAM Controls Help Charleston Hosiery Mills

**• Charleston Hosiery Mills connected the master control clock that signals shift changes in the boarding room and dyehouse to pressure controllers in the boiler room and is saving steam costs, reducing supervision, and increasing efficiency**

**By JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

ONE SUNDAY AFTERNOON Engineer Sam Thomas of Charleston Hosiery Mills, Cleveland, Tenn., entered the boarding room and found the temperature was 140° F. The heat that supplies the boarding forms had accidentally been left on.

No such accidents have occurred since the mill fixed a system to cut out the steam pressure in the boarding and dyeing departments when these departments are not working. In addition to a saving in steam costs, policing of these departments to check on steam shut-offs has been eliminated.

There are two Turbo preboarding machines, 40 Paramount boarding tables, and 15 dyeing machines at Charleston. A high-pressure steam system supplies the dyeing machines, a medium-pressure system is used for the boarding and preboarding rooms, and the plant is heated from a low-pressure system.

Two fire-tube boilers supply the steam. One boiler is 125-lb. pressure and the other 100-lb. pressure. Each boiler takes an equal load. If one boiler should fail, the other would pick up because they are connected through a throttle valve; but steam

CONTINUED ON PAGE 178

# To Store Roving— STACK BOXES, Not Bobbins

A yarn mill saves nearly $1,000 yearly by storing roving boxes in racks built of scrap lumber. Advantages—

- Handling costs reduced
- Ends down reduced
- Yarn quality improved
- Floor space saved

By JACK ALLAN

SPECIALTY-YARN MILLS have to stack roving every now and then, and production between roving and spinning is hard to balance. There are so many different stocks, blends, hank rovings, and qualities that roving supplies have to be accumulated far ahead.

However, there are practical limits to the number of roving boxes a mill can find room to store. Since space for boxes is always at a premium, roving backlogs often are stacked on the card-room floor.

For years, our mill stacked roving on the floor. On some types of orders, we had to stack and store more than 40 boxes for as long as a week.

Handling 40 boxes of roving means stacking down and picking up again. We knew that we were paying a double handling cost; but until recently, we considered stacking roving a necessary evil. Then we got some figures that show the ultimate cost of stacked roving far exceeds the labor cost involved in the extra handling of the stock.

It cost $7 a week, or $364 a year, to handle 40 boxes of stacked roving the second time. Also, we paid an additional $566.28 per year for the inferior quality and poor runability of roving that was mishandled during the stacking process. This extra cost remained hidden in our mill until we measured the quality of stacked versus unstacked roving.

How did we measure this quality?

### Excessive Ends Down

We ran ends-down checks on stacked and unstacked roving. Stacked roving ran much worse in the spinning room. To be exact, stacked roving ran worse by 21 ends down per thousand spindle hours. In addition, stacked roving showed lower uniformity and breaking strength. Here's how we know that stacked roving cost us an extra $566.28 a year.

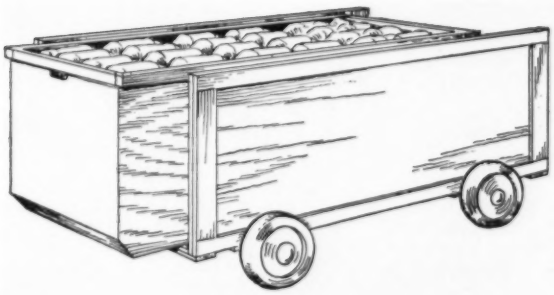
We creel weekly about 4,000 bobbins of stacked roving in the spinning room. On single-creel spinning, these bobbins affect 4,000 spindles. About four shifts are required to run out the 4,000 bobbins, or roughly 128,000 spindle hours.

At the rate of 21 extra ends down per thousand spindle hours, we had a total of 2,668 extra ends down from stacked roving. The cost of putting up these ends was $566.28 per year.

This figure does not include the cost of extra waste made or the cost of attending to more tailings at the spooler. For these reasons, we believe the figure to be a conservative estimate of the extra cost.

We found that roving actually was damaged when stacked on the floor under mill-operating conditions that exist at our plant. Damage occurred when roving packages were handled roughly during the stacking process. Layers of roving came loose from the package, and bobbins became tangled, dirtied, or contaminated with grease and grime.

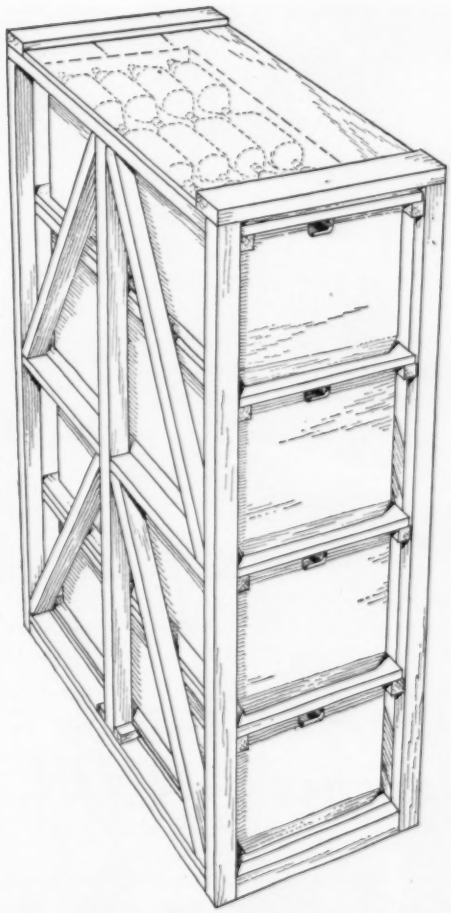
In addition, the ends of roving became frayed; and some ends had to be pulled off as waste when creeled at the spinning frame. Misplaced layers, tangles, and damage of that type caused break-backs at the spinning creel. We found that 12 out of 100 stacked roving bobbins had small tangles or misplaced layers upon arriving at the spinning room.



ROVING-BOX ENDS were removed to make a carrier for the laminated-fiber container that slides in and out of the wooden box.

**Handling Time for Stacked vs. Unstacked Roving**

| Job | Stacked roving (Time in mins.) | Unstacked roving (Time in mins.) |
|---|---|---|
| 1. Push box of roving to storage area | 1.75 | 1.75 |
| 2. Cut and lay paper on floor | 1.50 | — |
| 3. Stack down 100 bobbins of roving | 3.00 | — |
| 4. Pick up roving and stack in box for spinning room | 3.75 | — |
| 5. Push box to spinning room | 2.40 | 2.40 |
| 6. Lay up roving on frame | 2.75 | 2.75 |
| Totals | 15.15 | 6.90 |
| Difference | 8.25 mins. per box | |



RACKS, made from scrap lumber in the mill shop, hold four boxes each and occupy about the same floor space as one wooden roving box.

### Uniformity Was Affected

In addition, 24 of the 100 stacked roving bobbins showed loss in uniformity. Several bobbins were wet, either by excessive humidity or by condensation dripping on them from the walls. Wet roving causes hard ends in spinning, which in turn causes multiple ends down, bad work, waste, and scarred top-roll coverings.

In contrast to the wet bobbins, several bobbins were so dried out that the fly waste in spinning was excessive. This roving became powdery and showed loss in uniformity.

To show the spinning differences between stacked and unstacked roving, we had an operator apply colored rubber bands to the stack of roving under test. The banded roving was then laid up on the spinning frames, and the ends-down checker was told to keep the tally separate for the marked bobbins.

Twelve ends-down checks were made over a period of about three months. All tests showed significant differences in the number of ends down caused by defects common to roving.

We found that creel breaks ran 20% higher on stacked roving than on unstacked roving. Ends down were especially heavy when the stacked roving was freshly creeled, an indication that much of the trouble was located in the first few layers.

Our experience with stacked roving made of both quality cotton and synthetic fibers obviously indicated that we needed a new system for storing roving in the quantities required; so we developed a system that eliminates the storing of individual roving bobbins.

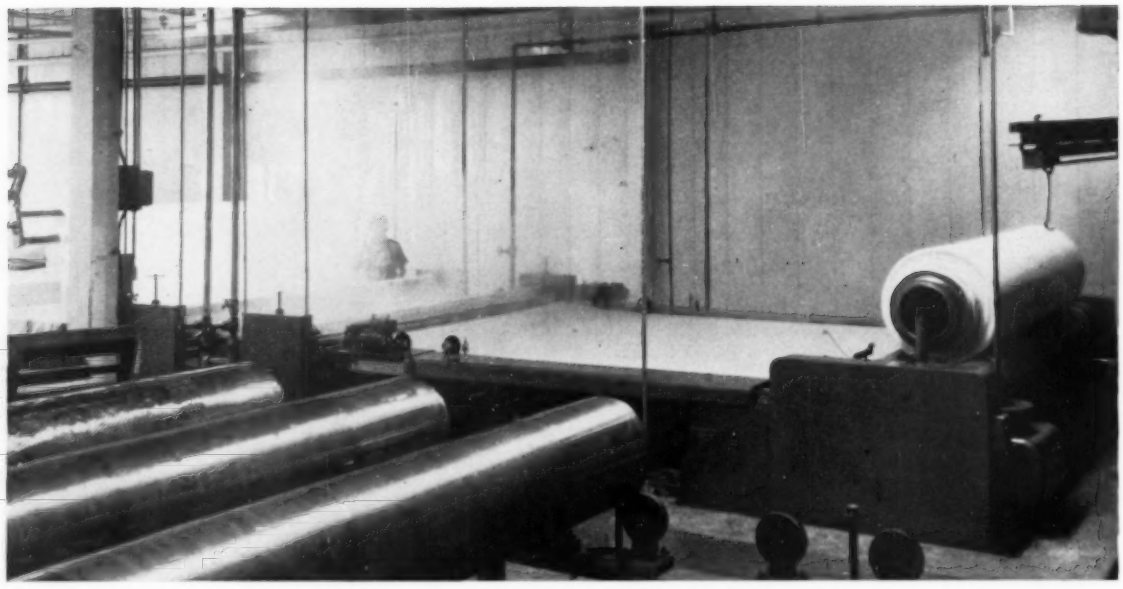
### Boxes Stored in Rack

We now store full boxes on top of each other in a special rack. This arrangement eliminates stacking down and picking up individual roving bobbins. All handling is by the full box.

The system has been used before in textile mills, but to our knowledge it has never been analyzed before as to actual dollar savings.

The system basically is a box-within-box arrangement. We ordered 40 laminated-fiber "nest" boxes that fit inside our regular wooden roving boxes. Then we removed the ends of several of the wooden roving boxes so that the nest box can be easily shoved in and out of the carrier box.

Nest boxes are stored three or four deep in special bins, built as illustrated. The bins greatly reduced the floor space formerly required for single-bobbin storage. In addition, the boxes protect the quality of our roving. The cost of the system is roughly the price of the new laminated-fiber boxes, since we were able to build the bins from scrap material already on hand.



**PREPARING THE LOAD** is of great importance to get Arnel ready for bleaching or dyeing. A wet-out in warm water on a McCreary batcher precedes pin-framing and batching into a firm roll.

# How American & Efird Bleaches ARNEL Tricot

**American & Efird Mills' finishing plant at Mt. Holly, N. C., got set for Arnel early in the game. The mill uses a Burlington Engineering Co. pressure-dyeing machine for all wet-processing operations on this fiber. One handling gives—**

- **Scouring, bleaching, or dyeing, and—**
- **Heat-setting**

**By ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

American & Efird Mills is combining advanced equipment and carefully worked out methods to produce Arnel tricot fabrics at its Mt. Holly, N. C., plant.

Being a triacetate fiber, Arnel requires somewhat different handling than its older sister, acetate. The main differences are a slower dyeing rate and, with heat treatment, better dye penetration, dimensional stability, and resistance to glazing.

Mt. Holly handles both circular- and flat-knit goods. To date, the Arnel fabrics handled have been tricots for the lingerie market, knitted at 168 ins. and finished at 110 ins.

## Good Package Is Necessary

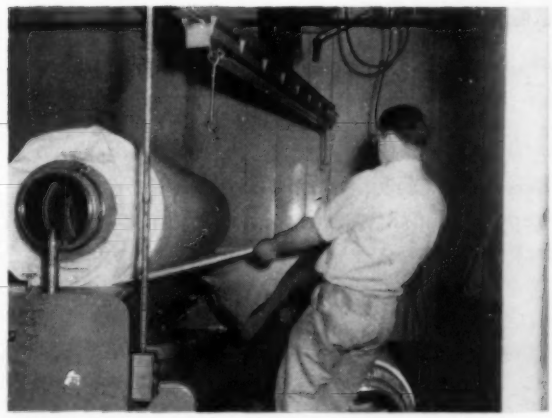
Mt. Holly starts with Arnel tricot by sewing the cuts end to end to give a batch of about 800 lbs. The lot is then run through a McCreary batching system. In this machine, scroll rollers perform a preliminary opening operation. The goods then travel into a small tank of warm water and onto a short pin frame where they are stretched to a width that will vary with the style, desired finished width, and dyeing characteristics of the fiber. For Arnel of the type mentioned, the frame width is approximately 118 ins.

Batcher tension is variable, and for Arnel it is set to produce a rather firm roll because of the tendency of Arnel fabrics to relax and loosen when under the conditions of forced liquor circulation and high temperature—both to be encountered in the following operations.

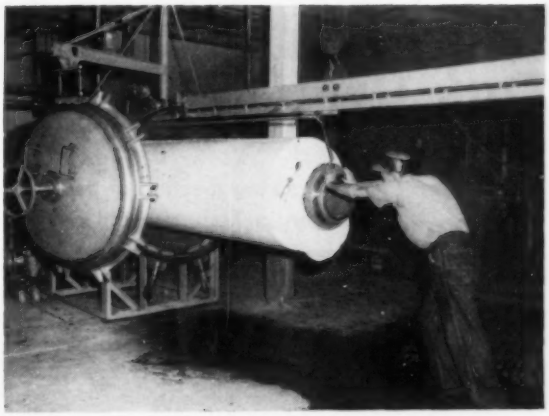
When the batch has been made up, it is wrapped in a light fabric, the ends of which are securely battened down by clamps; and the load is placed in the pressure-dyeing machine.

## Here's a Bleaching Cycle

First, the goods are scoured with 2% of a synthetic detergent for 30 mins. at 180 to 190° F. A small amount of a sequestrant is added to counteract deposition of metal ions. It is essential that Arnel be well cleaned of any foreign matter before bleaching, since the higher



**COMPLETED ROLL, weighing about 800 lbs., is carefully wrapped with a light cover cloth. The stainless-steel beam also carries a lapping of fabric to minimize any tendency toward localized effects at the perforations.**



**BURLINGTON PRESSURE-DYEING MACHINE is loaded directly from the beam attached to the hoist. The beam ends rest on a fitting at the end of the dyeing machine and a portable stand. Cloth is supported on a rack that slides into the machine.**

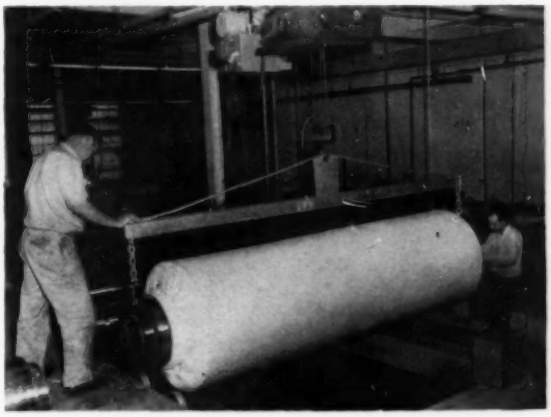
temperatiure of the bleach bath would be apt to set any oils or other materials to give an off-color effect and even stains and spots.

The scour bath is dropped; and in a fresh bath 4% peracetic acid owg., 1% soda ash, and more sequestrant are added. Temperature is brought to 260 to 270° F. and maintained for 1 hr. Then the bath is slowly cooled to 180° F., and the goods are rinsed in a fresh bath. Finishing materials can be added at this point to produce the desired hand. Cationic and non-ionic softeners are used for different effects.

Running the bleach bath at the high temperature serves to heat-treat the Arnel and produces a fabric that will have a residual shrinkage of 1% or less.

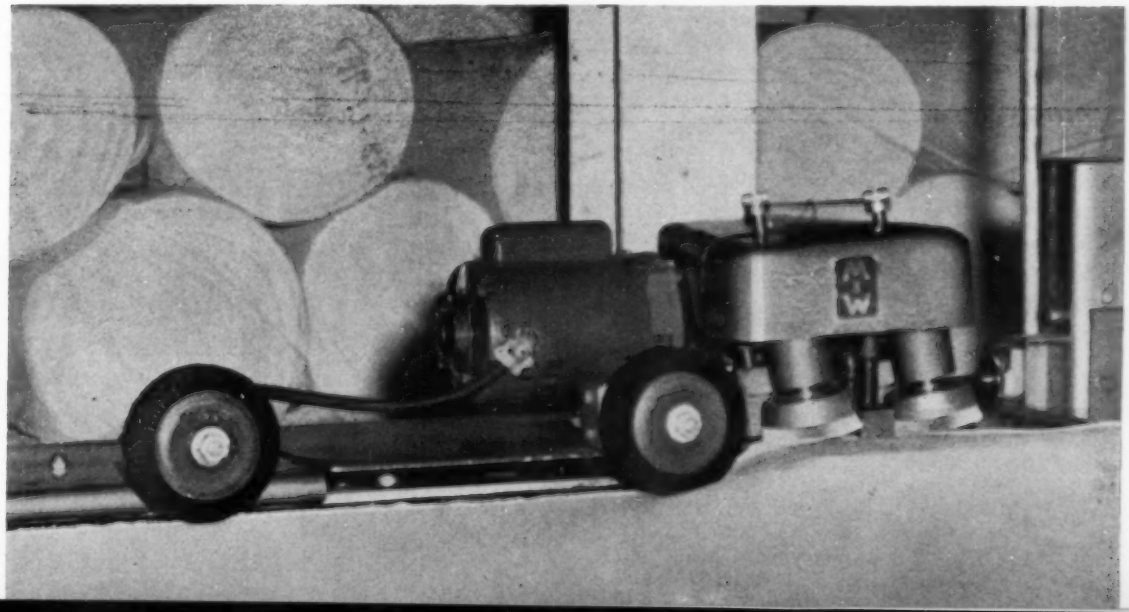
After scouring, bleaching, and the application of finish, the load is removed from the pressure vessel and given a vacuum extraction. Then the load is placed on a storage rack or goes directly to the tenters. Let-off stands with revolving mounts and a tilting scray feed the cloth to the tenter with minimum tension.

Arnel tricot fabrics processed in this manner come through with an excellent white and a warm, clothy hand.



**ROTATING ROLL STAND, built at the plant, serves as a storage area for batched goods or goods ready to finish. Slow rotation—1 rpm.—keeps moisture distributed and avoids local seepage and unbalanced rolls.**

**ASKANIA AUTOMATIC GUIDERS on the pin frame uncurl tricot edges and position goods so that pinning occurs only at the very edge of the fabric. Guiders control the frame-head position and move the frame to follow the cloth.**



# Georgia Operating Executives Talk Over CARDING Problems

**The spring meeting of the Textile Operating Executives of Georgia, held at Georgia Tech, brought out many reports of mill experiences with carding equipment and its operation. Subjects included—**

- **Antistatic materials**
- **SRRL opener**
- **Fire control**
- **High-speed drawing**

AT THE SPRING MEETING of the Textile Operating Executives of Georgia, mills, with only one or two exceptions, reported that the running properties of the 1955 cotton crop are better than the 1954 crop. Very few mills complained of mildew and tar spots, but some said the 1955 cotton is slightly trashier than the previous crop. Most of the mills did not consider it worth while to test for cavitomic properties.

Typical reports on the use of antistatic materials in processing synthetics were:

**Mill A**—"We apply a 0.1% oil-base agent at a tinting machine just before the pickers. Larger quantities of the agent may cause loading at the cards. We have less fly and fewer lap-ups at roving and spinning."

**Mill B**—"We apply up to 0.3% of a 1% solution each of Avcosol No. 104, Buco Base Oil No. 50, Zelex NE, Avitex R, and Nopco 1100 R wax. The fluid agents are applied at the feeder hoppers and the wax agents at the winders. A stronger solution will cause loading at the cards, but 0.3% strength reduces fly and gives better control over moisture content."

**Mill D**—"We apply 0.8% of a 10% wax solution at the picker. The wax does not cause loading of the card wire, and the work runs good at the fly frame."

### Lap Variation Reduced

Three mills reported that moisture monitors at the pickers reduced lap variation substantially and also reduced gear changes from 30 to 40%.

Six mills reported changing to 14x36 card-sliver cans, one to 15x36, and one to 16x36. The increased weight of sliver in the larger cans ranges from 32 to 150%. All the mills agreed that maintenance of the larger coiler heads is about the same as for the 12-in. heads. All but one of the mills preferred new coiler heads to change-overs.

Three mills, describing their experience with the gin-saw SRRL opener, reported fair to excellent results. Here are some of the opening-line organizations that were discussed:

**Mill K** has feeders, preopeners, feed apron, No. 10 condenser, and SRRL opener. Chokes and cylinder damage occur occasionally. Cotton is 1 1/32-in. Middling; 15% strips are fed.

**Mill O** has blending feeders, feed table, gyrator cleaner, SRRL opener, No. 11 condenser, No. 12 opener, No. 11 condenser, Superior cleaner, and gyrator cleaner. Middling, Low Middling, and Strict Good Ordinary cottons are used. Strips fed average 25%. Cotton is well opened, but there is a slight increase in chokes caused by the SRRL machine.

**Mill P** has five bale breakers feeding into the SRRL cleaner, followed by a No. 11-over-12 opener and cleaner. Cotton ranges from 7/8-in. Strict Low Middling to 1 1/4-in. Strict Middling. Results are fair, but further tests are required to determine the value of the investment.

### How Fires Start

Fires in the opening and picking rooms, according to most mills, are caused by tramp metal, matches, bad electrical wiring, hot bearings, chokes, and sparks from switches. Bits of metal and chokes were blamed for most of the fires.

Equipment used to fight fires includes Pyrene extinguishers, garden hose, dry chemicals, fog nozzles, and sprinkler systems. Most of the reporting mills use magnets to remove tramp metal.

Sixteen mills reported that oil is used to condition cotton in the opening room. The solutions range from 0.02 to 0.33% on the weight of the stock. None of the mills use other types of chemical conditioners. One mill applies the oil at the middle beater of the picker; the others add the oil in the opening line, usually at the hoppers or feed apron.

Pneumatic lap controls were discussed by 13 mills. About half the mills said the controls improve lap uniformity. All of them apply pressure to the calender-roll racks, with pressures ranging from 45 to 75 lbs. Picker maintenance costs remain about the same as without the controls.

### Picker Maintenance

Nineteen mills described in considerable detail their overhauling and maintenance schedules for pickers. A typical report from Mill B-2, follows:

"We give pickers a general overhaul once every six months but check the synchronizer and evener motion once a month. We use 7/8- to 1-in. Strict Low Middling cotton. Production is 460 lbs. per hr. Pickers have two Kirschner carding beaters. Front beater runs 1,186 rpm.; rear beater, 1,238 rpm. Here is our overhauling procedure:

"1. Run out all stock
"2. Remove all belts
"3. Remove cheeks
"4. Remove calender rolls
"5. Remove cross-drive shaft
"6. Remove drop shaft
"7. Check, repair, or replace all worn bearings and gears
"8. Replace all parts after cleaning, and check for freeness and level
"9. Oil all bearings, and check for freeness and meshing of gears
"10. Check front screens and bearings
"11. Check draw rolls and bearings
"12. Check air-control doors for seating
"13. Check mote knives and fly bars

CONTINUED ON PAGE 180

# Wonderknit Moves Machines For Faster PRODUCTION

**This Virginia knitting mill tackles the problem of keeping up to date with new styles of knitwear by using—**

- **Individual drives and feed-rail systems in the sewing room**
- **Special machines for quickly processing collars and plackets**
- **Benches and racks that can be rapidly changed around**

**By JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

WONDERKNIT CORP., Galax, Va., produces men's and children's high-styled knitted outerwear. To keep up with the rapid changes of style, machinery is laid out according to the style being run.

The mill knits its own fabric on a variety of Supreme 64- and 96-feed machines. Patterns are made up in the knitting room, and a stylist continually figures new designs.

Part of the fabric is dyed in one of the two dyebecks, centrifugally extracted, and dried in a loop drier. Striped fabric is cut down the side and sewed together so that the horizontal stripes match.

Rolls of finished fabric are placed on boxes and unrolled on the cutting table. While some work is laid up, much of it is cut singly.

From the cutting room, the work travels to the subassembly department, where collars and trims are made up A feed-rail system allows each machine to be moved according to the style being made.

### Different Machines Required

Knitted goods with plackets require an entirely different machinery layout to those goods with collars. All sewing machines have individual drives, and the feed-rail system is suspended from the roof to give a complete coverage of the sewing room so that a machine can be moved quickly to any part of the room without upsetting production.

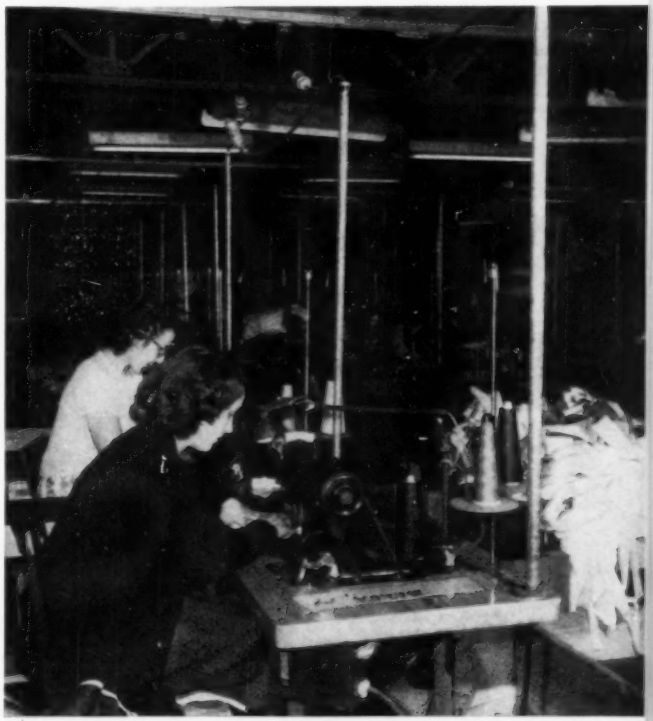
There are two style periods during the year for spring and fall lines; so the machinery layout is often changed. Each subassembly section has its own auxiliary equipment, such as markers and irons, conveniently arranged to give the greatest efficiency.

The machines are arranged so that the first group puts the lining in the collar, the second group top-stitches the collar, and the third group turns the collar.

### Special Machines Are Used

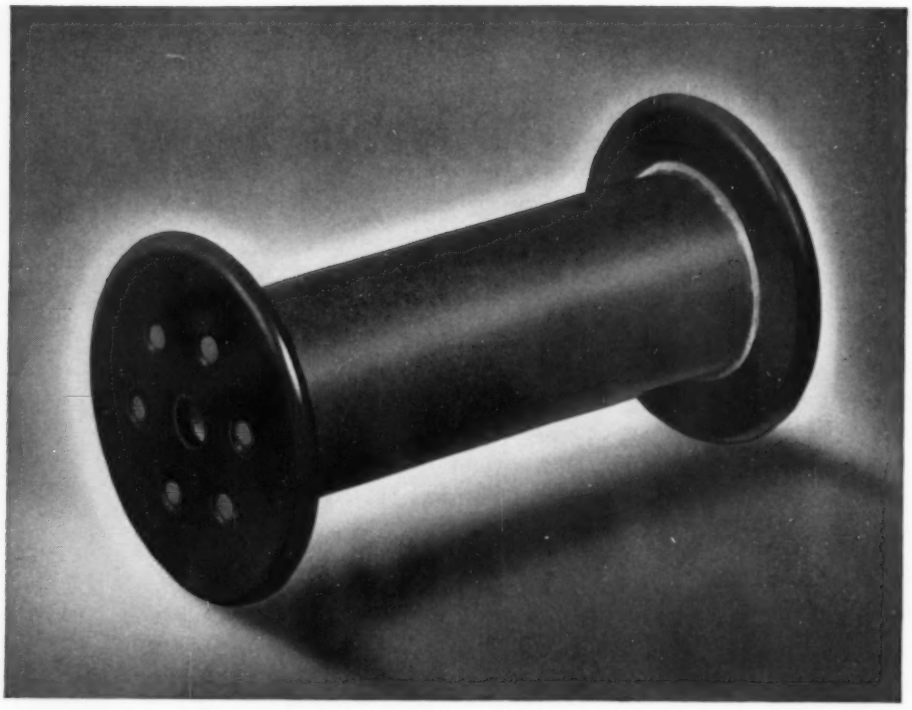
A special machine is used to match collars for a better fit in the necks. Three notches are made at one time so that the collars are matched up with the center of the neck and the shoulder join. The distance between notches is punched according to the size of the shirt. The collars are then pressed with a flat iron.

CONTINUED ON PAGE 186



FEED-RAIL SYSTEM allows sewing machines to be moved to any position in the sewing room to fit the production line of styles that are changed twice yearly.

SPECIAL MACHINES are used to turn collars and plackets rapidly. Benches and tables can be moved quickly to any position in the room.



# For smooth-finish, wear-resistant bobbins

## ...use *Taylor Fibre and Laminates*

***Bobbin heads*** with high impact strength, smooth finish and excellent wear resistance are made from Taylor Grade LLL laminated plastic or Taylor Bobbin Fibre. Both are easy and economical to machine and punch. Together they afford a good range of strength and wearing properties to cover nearly any bobbin application.

***Bobbin spools*** use the smoothness, high strength and stability of Taylor Grade XX laminated plastic tubing. A non-bleeding material, in steaming or setting operations. Tubes come in outside diameters from 3/16" to 20" . . . turned, sanded or ground finishes available.

Taylor manufactures no finished products for mill use . . . but specializes solely in production of materials for equipment manufacturers. A broad variety of vulcanized fibre and laminated plastics, in sheet, tube and rod forms for economical production, is ready to serve your requirements.

In shuttles, sizing bobbins, spinning bobbins, package tubes, bearing blocks and cam followers, these materials add extra value in performance . . . extra savings in production. Specify Taylor materials for the equipment you manufacture, and make sure that Taylor materials are used in the equipment you buy for your mill.

TAYLOR FIBRE CO.—Plants at Norristown, Pa.—La Verne, Calif.

***Call on Taylor for Materials Application Engineering***

Specialists on Taylor's engineering staff are well qualified to help solve materials problems for textile equipment manufacturers. They will analyze your specific application and help you select and apply the most effective and economical grades of Taylor materials. For a consultation, write or call your nearest Taylor office.

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← For more data, write this page number on Reader-Service card.

# How To Select and Use Modern ELECTRICAL TESTERS

**You can get by with only a few basic instruments to test electrical components. But to be sure production shutdowns aren't extensive, your trouble shooter needs special testers and knowledge for—**

- **Textile-mill humidity conditions**
- **Severe conditions of vibration**
- **Instrumentation of electronic controls**

WHEN ELECTRICAL DEVICES or components are used, safety and economy demand electrical measurments. These measurements are made with electrical instruments that provide a continuous check of performance. A continuous check may prevent serious trouble by indicating a gradual change in some electrical characteristic.

In all instances when trouble occurs, electrical instruments can help locate it. And they are often necessary to analyze the trouble before repairs can be made.

There are three general fields of use for electrical instruments:

1. Development work where new products are being engineered. Efficiency, economy, and life are tested before manufacture.
2. Checking the performance of equipment, products, or processes.
3. Trouble shooting on equipment in operation.

### Making Routine Tests

Checking includes maintenance where routine tests are made to determine that the loads on main lines and feeder lines are not too great. Switchboard monitoring of generating and distribution equipment ground detection using polyphase electrostatic ground detectors or triplex voltmeters, batch weighing and monitoring and production of stretch yarns, printing fabrics, etc. all fall in the checking category.

Instruments employed in checking service need not be connected to a circuit at all times. For economy, one ammeter and one voltmeter may be enough to monitor all phases of a certain polyphase system; the instruments are switched from phase to phase. A clamp-on ammeter may be used at irregular intervals to check the load on several motors in a mill.

If the checking or process monitoring instruments are selected properly, connected permanently, maintained carefully, and read accurately, the information obtained from them is very valuable in quality control and production. Deviation from a familiar normal or an average value for a particular function shows that trouble is brewing, and steps can be taken quickly to find the trouble.

### Choosing the Instruments

The choice of instruments for trouble shooting is governed by the kinds of power, ratings of the largest and smallest loads, and characteristics of these loads. A process control instrument should never be used for trouble shooting in another circuit because sooner or later you will forget to put it back. Then someone may hang a low-voltage meter on a 600-v. circuit, and there will be nothing to put back.

The most important single factor to consider in selecting an electrical instrument is the kind of current: a.c. or d.c. For d.c., a permanent-magnet moving-coil instrument with its linear scale and low sensitivity to external magnetic fields is best. For a.c. at commercial frequencies, dynamometer or repulsion-iron-type instruments are best.

A second factor is the selection of the proper full-scale range for the quality to be measured. It's necessary to know something about the circuit or component; for example: a 500-v. line is to be used, or the full-load current of a given motor is 27 amps.

### Checking the Voltage

When the amplitude of the voltage on a power circuit to be measured is not known, a Wiggington circuit tester will give the approximate voltage. The tester also indicates whether the circuit is a.c. or d.c. by vibrating on a.c.

When a 600-v. voltmeter is used with a steady resistive load on a 10-v. circuit, it will not be damaged. But a 10-v. instrument on a 550- or 600-v. circuit would certainly be damaged.

Since the accuracies of most instruments are specified as a percentage of the full-scale value, more precise readings are obtained with a range that allows pointer deflection to about 75% of full scale. When an ammeter is being selected, it's important to select the scale range carefully. In instances of changing loads as in motors, tungsten lamps, and capacitors, ammeters may be damaged if the circuit behavior is not understood fairly well.

### Care of Ammeters

Direct-current ammeters should be protected against the heavy charging current of capacitors, low-reactance starting loads of motors, and low resistance of cold lamps by using shorting switches that can be opened after steady state conditions are reached. Voltmeters must be protected from

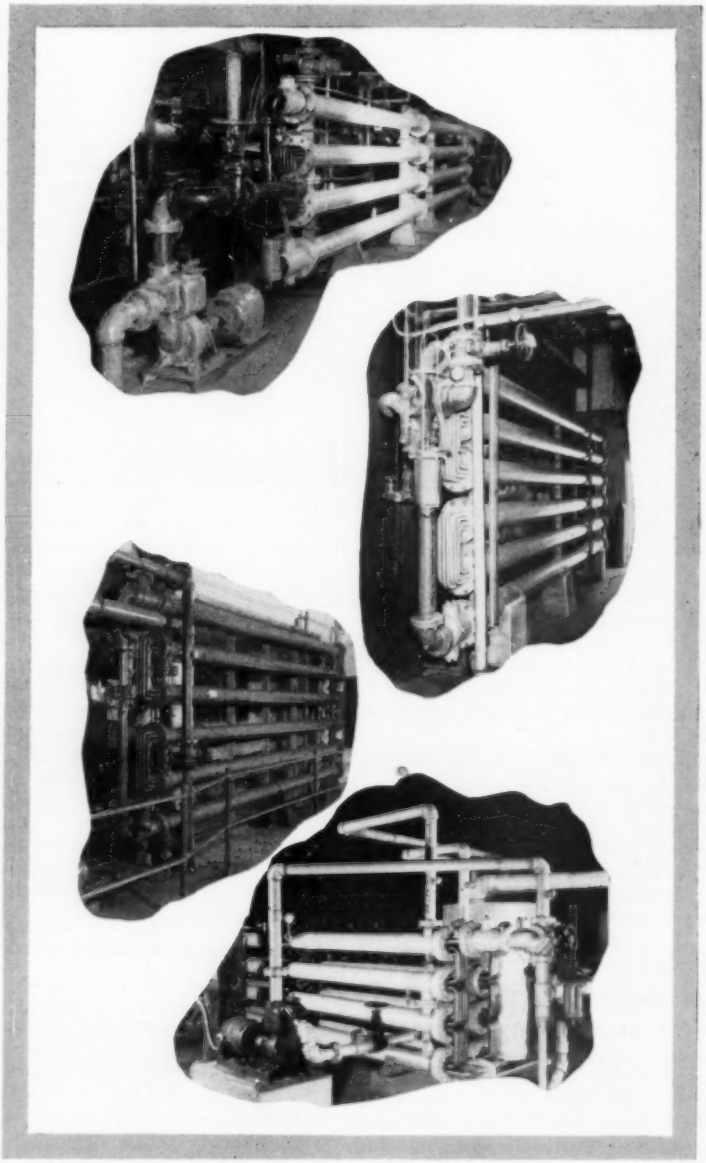
*Based on a paper presented by Robert S. White, chief electrical engineer, Universal Winding Co., Providence, R. I., at a recent meeting of the Textile Subcommittee of the American Institute of Electrical Engineers at Atlanta, Ga.*

# These systems are saving Textile Mills thousands of dollars annually

Saving money that one time poured down the drain is the job of these Bready Systems of Waste Heat Recovery. Even waste water with temperatures of 90° F or lower flowing through a Bready System of Waste Heat Recovery can result in fuel reductions of thousands of dollars a year.

Ludell custom-engineers Bready Systems of Waste Heat Recovery to each plant's needs. The systems are expansible to take care of future requirements. They are self-cleaning and non-clogging. Constant, normalized high heat reclamation is maintained by automatic backflushing and chemical recirculation.

Have you investigated the benefits of a Bready System of Waste Heat Recovery as it applies to your boiler plant? Write today for details or to arrange for Ludell to make a free engineering survey of your boiler system. There is no obligation, of course.



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MANUFACTURERS OF BREADY SYSTEMS OF WASTE HEAT RECOVERY

damage by extremely high induced voltages that could be caused when the field current of a motor is opened, for example. The instrument must be disconnected from the circuit by removing a lead or by opening a series switch.

Thermocouple ammeters have two drawbacks when they are used for trouble shooting: (1) they have very low overload capacity, and (2) usually square law scales crowd the lower half of the full-scale range into one-fourth of the scale length.

### Keep Instruments Accurate

When the proper instrument has been selected, there are three practical precautions to observe. The first two precautions affect the accuracy of the readings. These dangers are caused by the presence of strong external magnetic fields, which may be from a heavy current flow in adjacent conductors or the wave form of the current and voltage in the circuit.

The third danger is the line to ground potential of the circuit. The insulation rating of the instrument must not be exceeded if it is mounted on a grounded panel or placed on a machine during circuit testing.

A good working rule to preserve instrument accuracy in trouble shooting is to space the instrument at least one diameter, or face width, away from suspected magnetic fields or other instruments. Most clamp-on instruments are designed so that the movement is safely beyond the field produced around the conductor in which the current flow is being measured.

### Watch Severe Conditions

In addition to the circuit requirements that influence the selection of an instrument, you must consider any unusually severe conditions that may exist in your plant. Modern instruments can be used over a fairly wide range of adverse conditions; but large variations in temperature, humidity, or vibration might require special enclosures or mounting methods.

High humidities and corrosive atmospheres damage instruments. Moisture may accumulate inside the case of instruments used in areas of high humidity in textile mills if the room temperature drops suddenly. The interiors of instruments used under questionable ambient conditions should be examined periodically.

Permanent-magnet moving-coil instruments with linear scales measure the average value of voltage or current. Electrodynamic, repulsion-iron, and thermocouple instruments indicate the effective or root-mean-square value of the characteristic measured.

On steady d.c., all these instruments give exactly the same indications. The general practice, however, is to use averaging (permanent-magnetic moving-coil) instruments to measure steady and ripple d.c.

In d.c. circuits, an ammeter and a voltmeter can be used to test the circuit. Usually, extremely high accuracy is not necessary since most industrial equipment will perform satisfactorily on voltages 10% above or below the device rating.

The portable instrument chosen needs to be accurate only within 1 or 2%, but most instruments are accurate within 0.5%. Separate units, rather than multipurpose units, should be used so that simultaneous voltage and current readings can be taken.

Instrument cases should have tight-fitting covers and leather carrying straps. When the instruments are not being used, they should be stored in locked, clean, dry cabinets. The movement should be the permanent-magnet moving-coil type. But one or two root-mean-square indicating instruments should be kept.

The scales should be evenly divided and from 4 to 6 ins. long for easy and accurate reading. Select an instrument with dull-white scales, sharp, deep black graduations, and knife-edge pointers. Portable voltmeters are available in two- and three-scale ranges. Choose a voltage scale that is 25% greater than the highest d.c. voltage in the mill.

### Low-Voltage Instruments

The choice of instruments for lower voltage ranges depends on other common voltages that have to be checked. Voltmeter sensitivity should be high so that the instrument will not change the characteristics of high-impedance circuits.

Portable d.c. ammeters are available in one or three scale ranges with self-contained shunts in ranges up to 500 amps. The highest range selected must be somewhat higher than the full-load current of the largest d.c. load in the mill. The lower ranges are governed by other typical loads.

A permanent-magnet moving-coil millivoltmeter can be used with a number of shunts and a set of calibrated test leads to measure any desired series of current ranges. If portable shunts are used, they must be handled as carefully as the instruments they're used with because nicks or deformation will change the calibration.

### Electronic Testing

In a mill with extensive applications of electronic devices and modern control equipment, additional testing instruments are needed. Multipurpose and multirange instruments are commonly used to service these circuits.

Several manufacturers produce volt-ohm-milliameters with large scales calibrated in d.c. and a.c. volts with five or six full-scale ranges from 2½ to 5,000 v. At least five d.c. current ranges are available with full-scale deflections from 50 microamperes to 10 amps.

Miniature self-contained 22½-v. dry batteries permit circuits and scales to be included that indicate values of resistance as high as 40- or 50-million ohms. The movements in these instruments are usually the permanent-magnet moving-coil type with 20,000-ohms-per-volt sensitivity.

### Tips for Electricians

If test leads for individual voltmeters and ammeters are made by plant electricians, the cable constructions should be extra-flexible stranding with tough-plastic or other oil-resistant insulation. Lugs to prevent fraying and to insure positive contact should be brazed or staked to the wire securely.

If shunts are part of the switchboard equipment, be certain that some of the test leads have legs with holes sized to fit the drop terminals on the shunts. The standard lead length for shunts and portable instruments is 3 ft.

When a voltmeter and an ammeter are used at once to check a d.c. lead, precautions are necessary. If the voltmeter resistance is high compared to the load resistance, the voltmeter should be connected across the circuit between the load and the ammeter so that the actual voltage across the load is measured.

If, however, the ammeter resistance is very low compared to the load resistance, connect the voltmeter across the circuit between the ammeter and the source.

### Testing for Trouble

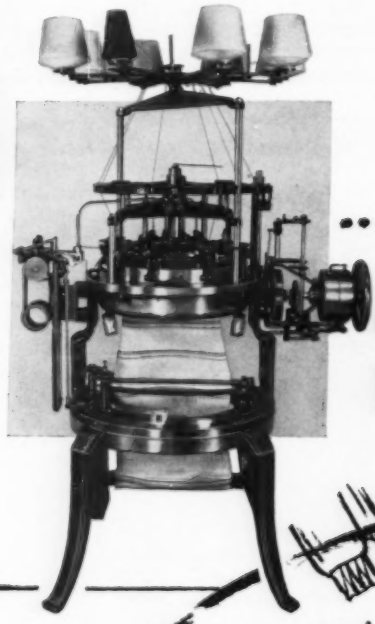
Trouble shooting on d.c. circuits usually requires several additional instruments. To test a squirrel-cage motor, for example, a voltmeter, ammeter, and wattmeter or power-factor meter are required. The wattmeter or power-factor meter is required because of the reactive nature of the motor load.

Most of the trouble in a.c. power circuits consist of: (1) load, power-factor, and voltage surveys of main lines or feeder lines; (2) searches for faults and grounds; and (3) correcting faulty operation in the control and power circuits of machinery.

The minimum instruments for satis-

CONTINUED ON PAGE 192

**THIS** ⋯⋯› ‹⋯⋯ **IS THE MACHINE FOR YOU...**



This Wildman Rib Fabric Striping Machine increases production through effecting combinations of a great variety of stitches (one by one or two by two) striped fabric of unlimited patterns — half cardigan, English or Round welt, French or Tubular welt and clearing courses or draw thread.

It works either as a single feed machine, or in any combination of feeds producing fabrics for cuffs, collarettes, sweater bottoms, underwear, outerwear, sportswear and beach wear.

Belt or individual motor drive — to fit your needs.

Investigate this most adaptable, flexible and versatile Wildman Rib Fabric Striping Machine today.

***Wildman makes the machines that tend to their own knitting***

**WILDMAN**

**WILDMAN MFG. COMPANY, NORRISTOWN, PA.**

***Manufacturers of:*** **FULL FASHIONED MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS**

# Control SOCK SIZES To Do a Better Job for Less Cost

**• Foot lengths of hosiery from the same machine vary from 9.6 ins. to 10.9 ins. each day. Control these lengths, and you reduce waste and save pairing time. Make records so that operators can spot trends but don't overadjust machines.**

THE PROBLEM of dimensional variations in hosiery existed when all machines were hand-operated. Old hand-frame knitters tackled this problem by not allowing the bobbins to become completely empty; they believed this technique had an effect on loop size. They also covered the yarn to retain moisture when it was not in use.

*From a paper delivered at the Third International Knitgoods Congress at Brussels, Belgium, by W. A. Dutton, Deputy Director, Hosiery & Allied Trades Research Assn.*

Modern machines have been speeded up, machine temperatures fluctuate more, and operators tend more machines; so the knitter does not have the time to take some of the precautions that were possible years ago.

Tests made on socks knitted on the same machine under normal mill conditions show that foot lengths varied from 9.6 ins. to 10.9 ins. No adjustments were made to the machine during the day.

These variations are not removed by dyeing and finishing, although they can be temporarily masked by boarding. When the articles are wet out by the consumer, they resort to their original dimensions.

### Scouring Causes Shrinkage

When socks are scoured and dyed, some shrinkage takes place because of the release of knitting strains; but the variation range in the gray and scoured goods is similar. Although nylon socks are preboarded to shape, it is not possible to overcome knitting irregularities.

If batches of socks could be made of equal size, the time-consuming and expensive operation of pairing would be eliminated.

CONTINUED ON PAGE 188

| Foot lengths (ins.) | Lengths after knitting | Lengths after scouring |
|---|---|---|
| 8.4 | — | 9 |
| 8.6 | — | 48 |
| 8.8 | — | 58 |
| 9.0 | — | 48 |
| 9.2 | — | 30 |
| 9.4 | 20 | 4 |
| 9.6 | 50 | 3 |
| 9.8 | 39 | — |
| 10.0 | 37 | — |
| 10.2 | 44 | — |
| 10.4 | 7 | — |
| 10.6 | 3 | — |

**A BATCH of 200 socks was tested before and after scouring. The range of dimensions is similar in both tests, although some shrinkage has taken place.**

| Courses per inch | Percentage relaxation | |
|---|---|---|
| | Length | Width |
| 21.8 | 3.6 | 7.6 |
| 20.0 | 4.9 | 7.2 |
| 19.7 | 7.0 | 6.4 |
| 18.2 | 8.8 | 3.9 |
| 17.7 | 9.8 | 1.8 |
| 16.7 | 11.3 | −1.1 |

**RELAXING wool socks in warm alkaline liquor shows that fabric knitted with a tight stitch has a high width and low length relaxation. A loose-knit fabric gains in width.**

# ANOTHER FIRST

## FROM SACO-LOWELL — PREPACKAGED *Repair Parts Service* FOR FREQUENTLY ORDERED PARTS.

***For the mill it means***

- **Faster, more efficient service**
- **Neater, cleaner storage of parts in supply room**
- **Instantaneous inventory control**
- **Maximum number of parts in minimum space**
- **Bold, clear box markings to show part number, name, and number of units in package**
- **Strong boxes protect parts against damage.**

The Saco-Lowell prepackaging program offers mills an opportunity to improve ordering procedures and parts handling with a resulting substantial saving in costs. Multiple unit packaging has been developed only after careful scrutiny of orders over a period of years to see the average number of parts of a particular type that are ordinarily ordered. For example, card mote knives are almost always ordered in pairs; rotary brushes and comb blades by the dozen; bolsters in lots of 100.

**Write for complete list of Prepackaged Saco-Lowell Repair Parts — then order this new, convenient way. Continuing proof that *"It pays to use genuine Saco-Lowell Repair Parts."***

**SACO-LOWELL**
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

POINTERS for SUPERVISORS

# Do You Receive Full Value For Skilled-Labor Wages?

• You may be paying for unused skills that required time and money to develop. Jobs needing these skills are often neglected while efforts are expended on minor chores.

By L. P. SCARBORO, Riegel Textile Corp.

In these days of high costs, low profits, and tough competition, we in the textile industry must do everything possible to improve the over-all efficiency of our operations. Improved and faster machinery, new methods and materials, and better selection and training of employees are some of the things we must consider to strengthen our competitive position.

Anything that will lower costs, increase production, or improve quality is worth investigating. But many times a machine or a method that looked like a sure-fire thing fizzles out in actual practice. Then, too, new machinery requires a high financial outlay; and new, untried methods usually need a lot of time and experimentation for practical development.

New and improved methods and machinery are part of the answer to our problem, and the search for them should not be slackened. However, there is a field in which we can immediately make some progress without spending any money except for study and research. Almost any mill can tap a gold mine in the field of skilled labor.

Of course there are some mills that are using skilled labor to its best advantage. They have aptitude tests, job evaluation, time and motion study, and all the other props for the full utilization of labor. But even with all these studies and tests, the many variables of textile manufacturing will permit some inefficiencies to creep in.

### Jobs Will Change

The average mill uses time and motion study and job evaluation for laying out new jobs, but rarely for checking existing methods. After a job has been evaluated and laid out in a scientific manner, it will gradually change if close follow-up is not maintained. Some of the original duties of the operator will be dropped and other duties added. A job that was laid out for 100% utilization of the operator's time may, after a short while, require less than 75% or more than 100% of his time.

The place that is most often overlooked, and yet contains the best possibilities for improvement, is the performance of simple tasks by highly paid and trained employees.

If you hired a brick mason to build a wall around your yard, would you pay him brick mason's wages to clean up the yard afterwards? No, you would hire someone else at half the wages the brick mason was getting. You would get the yard cleaned up just as good and at half the cost because this job does not require a high degree of skill.

Yet in the mill we often pay skilled-labor wages and tie up experienced employees in the performance of simple chores that any one can do with a minimum of training.

Take, for instance, the job of spinning. It takes about six months to train a spinner, and she must be paid a wage commensurate to her skill. Yet many spinning jobs include such tasks as picking rolls, rubbing rails, wiping roving, cleaning back guides, and other cleaning and maintenance jobs.

Most of these cleaning jobs could be done just as well by an employee with only a few hours' training and for about 25¢ an hour less pay. Also, the spinner would be released to tend more frames and could do a better job of spinning when she could concentrate on this task alone.

### Fixers Inherit Odd Jobs

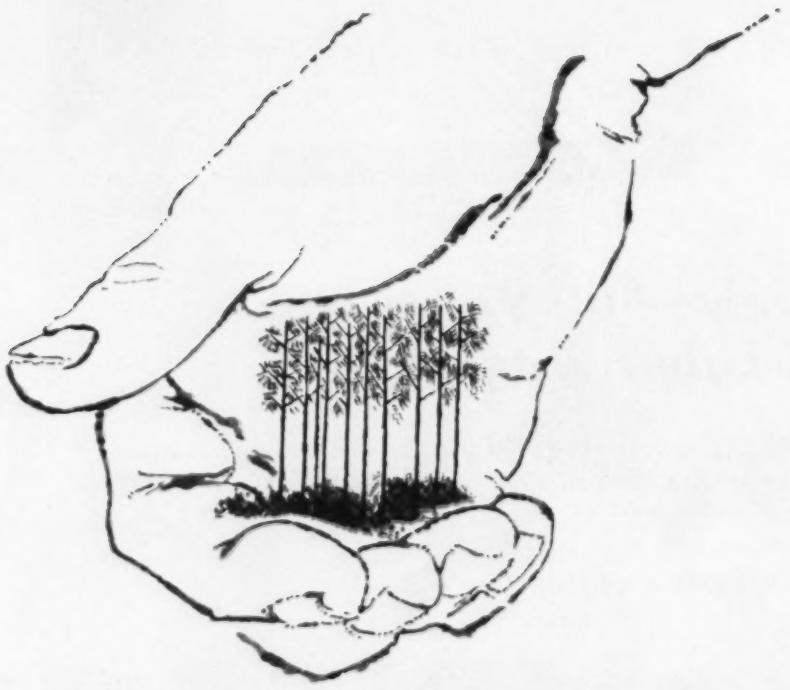
Another glaring example of a misused skill is the many odd jobs a section man is required to do. These men are trained to be fixers, and their primary duty is to repair and maintain the machinery. To keep his section in operation, a fixer who is worth his salt will help out on jobs that are behind. These jobs may be putting up ends, changing travelers, doffing, laying-up roving, or any of the numerous tasks required in a spinning room.

However, after a time the fixer wakes up and realizes that he has inherited a lot of odd jobs such as oiling lifter rods, cleaning out heads, checking bad roving, reading hank clocks, and a variety of other tasks that consume much time but require little skill.

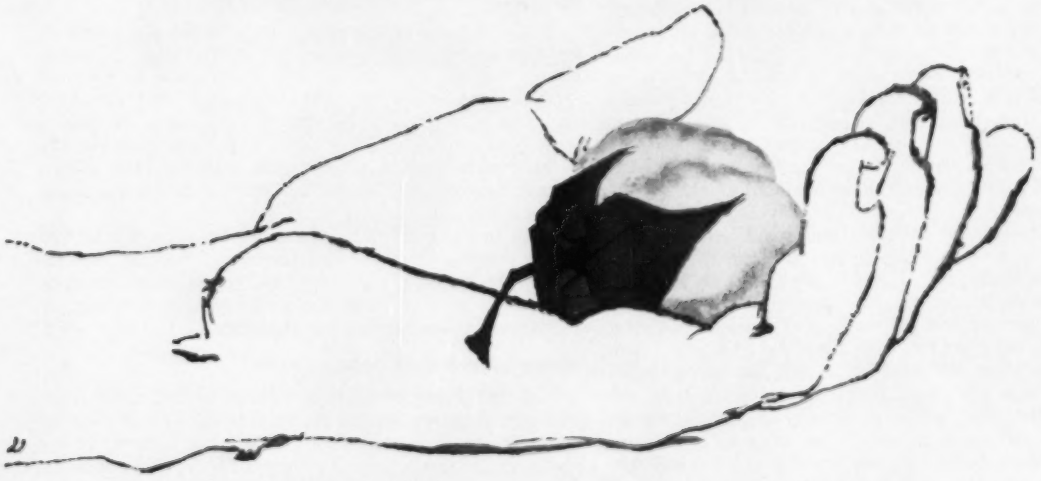
Miscellaneous tasks will be added to jobs from doffing to supervising. A job will be laid out to best utilize a person's time and talents, but gradually odd jobs will be created and tacked onto existing jobs in a haphazard manner.

If all jobs are not re-evaluated periodically, the structure of some of them will be top-heavy. Take, for instance the supervisory job of second hand. In some mills the second hand must read hank clocks; mark up time; weight and

CONTINUED ON PAGE 192



# Which hand holds your product's future?



*Both*, perhaps—for *only* Buckeye can supply quality cellulose from *both* cotton linters and wood pulp. This versatility is one of the unique advantages Buckeye can offer each and every account.

Whichever you choose—wood or cotton—you're always right with Buckeye. As industry's first producer of cellulose, Buckeye has the experience to "tailor" cellulose products to your exact specifications. And Buckeye backs up its products with superior customer service—the kind that *anticipates* your needs . . . that seeks to develop the cellulose best suited to your business *in advance*.

Finally, you can rely on Buckeye to see to it that your order is processed, cut, and loaded—*exactly as specified*.

*Buckeye Cellulose Corporation, Memphis 8, Tenn.*

BUCKEYE
. . . first in cellulose



← For more data, write this page number on Reader-Service card.

# EQUIPMENT and SUPPLY NEWS

## Pattern Tufting Machine

A pattern tufting machine for producing patterned tufted fabrics in high- and low-nap loop pile has been introduced by Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn. This machine gives more-complete control over the yarn and therefore makes it possible to produce more-intricate patterns.

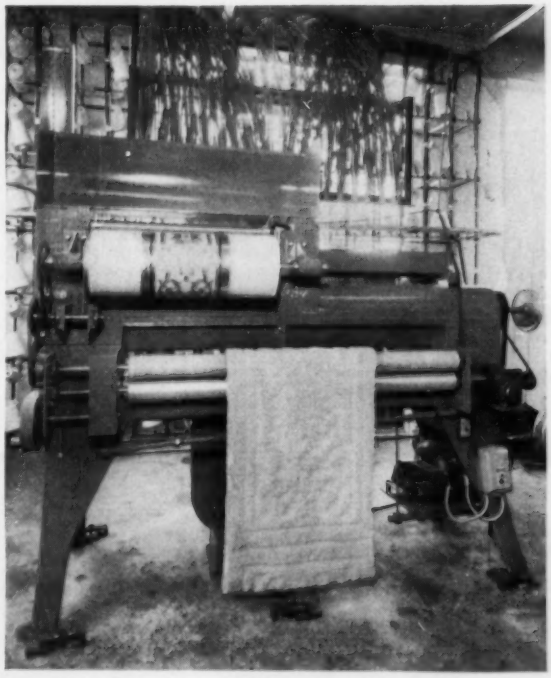
The pattern control is a metallic shell covered with an insulating material. The pattern is cut out of the insulating material to expose portions of the bare shell. Electrical contact fingers trace over this pattern and make and break contacts as the pattern drum revolves.

There is one pattern control finger for every two needles in the machine, and therefore the full width of the machine is controlled in two-needle steps.

The height of the pile is controlled by the speed of the yarn as it is fed to the needles. The pattern control selects two rates of speed for feeding the yarn: the high speed produces high nap, and the low speed produces low nap.

The speed change is accomplished by two yarn feed rolls driven at different speeds.

To change from one pattern to another, only the pattern shell is changed, which requires only 1 or 2 mins. No rethreading is necessary. The machine can produce any pattern that can be drawn, and the speed of the machine is the same as that of plain loop-pile tufting machines.



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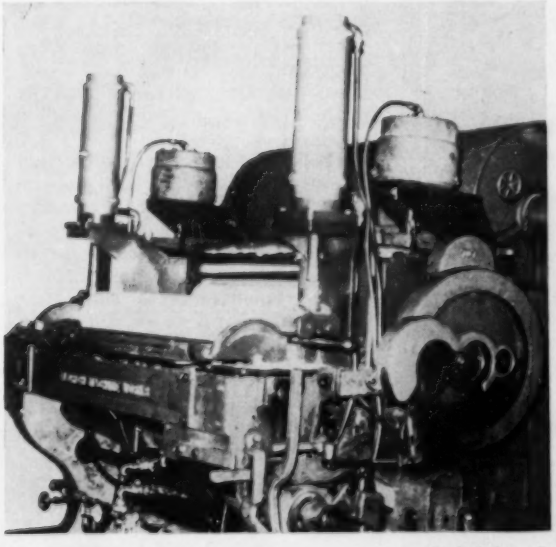


## Lap-Control System

The Long pneumatic lap control for pickers, developed by Livingstone & Haven, Inc., 2115 Meeting St., Charleston, S. C., in cooperation with Westinghouse Air Brake Co., is now on the market.

The system permits the production of laps weighing as much as 90 to 110 lbs. without materially increasing the width or diameter of the laps. Diameter of 100-lb. laps is approximately 21 ins.

Advantages include increased production, reduced maintenance, equal pressure on the lap pins at all times, even let-off as the lap is made, and 25% reduction in doffing time.

Further, the system eliminates loggerheads and reduces wear on the lap pins. Lap-pin breakage is minimized, and lap splitting is reduced. If a choke occurs in the calender-roll section, the picker immediately knocks off.

Circle T-2 on Reader-Service Card

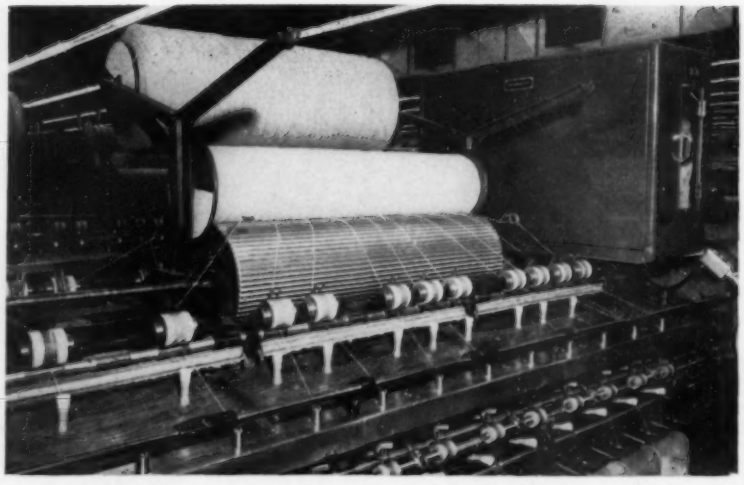
## Suction Cleaner

A double-suction cleaner for wool spinning frames has been announced by Thoma Co., Inc., 1054 Boiling Springs Rd., Spartanburg, S. C.

The cleaner has two suction points. One is under the delivery roll, and one is under the front draft roll.

The filter box can be completely disassembled while on the frame by removing 10 screws. The tubes are Duralumin for long life and to prevent warping. The tubes are locked into place, but they can be removed with a gentle twist and a pull. Plexiglas doors let you look into the box at all times.

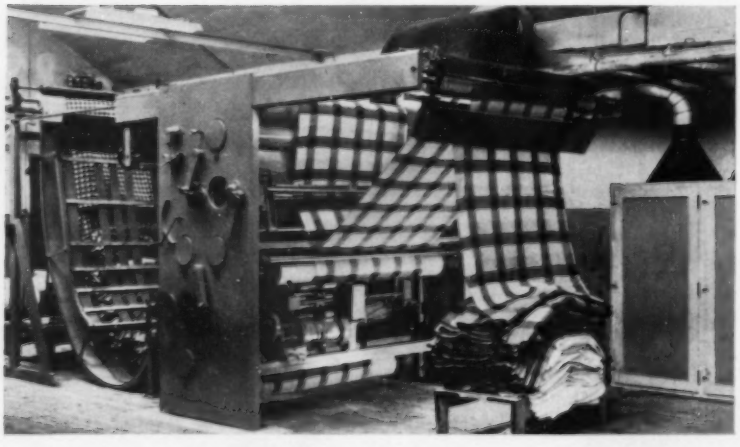
Workloads are increased because there is better control and central collection of broken ends. There is no stripping of bobbins because of double ends formed above the fly board. Ends down that are caused by possible double ends, lap-ups, and whip ends are reduced.

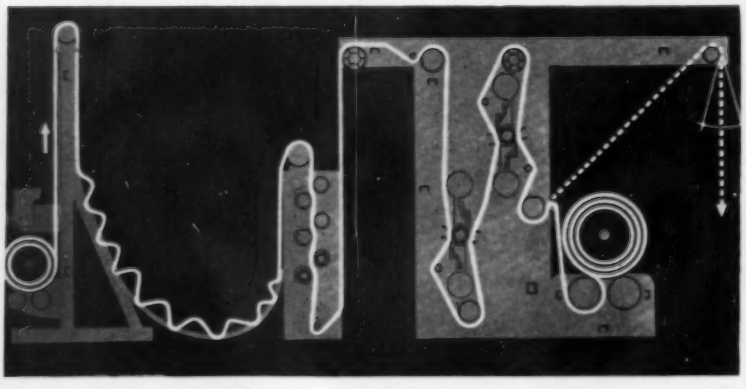


Yarn quality is better because there is a cleaner recovery of broken ends, a cleaner working area, no double ends, and a reduction in contamination of blends.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y., is the selling agent.

**Circle T-3 on Reader-Service Card**





## Cloth Shear

A shear that performs a double shearing on both sides of the fabric with only two cutters has been introduced by Sam. Vollenweider Ltd., Horgen, Switzerland.

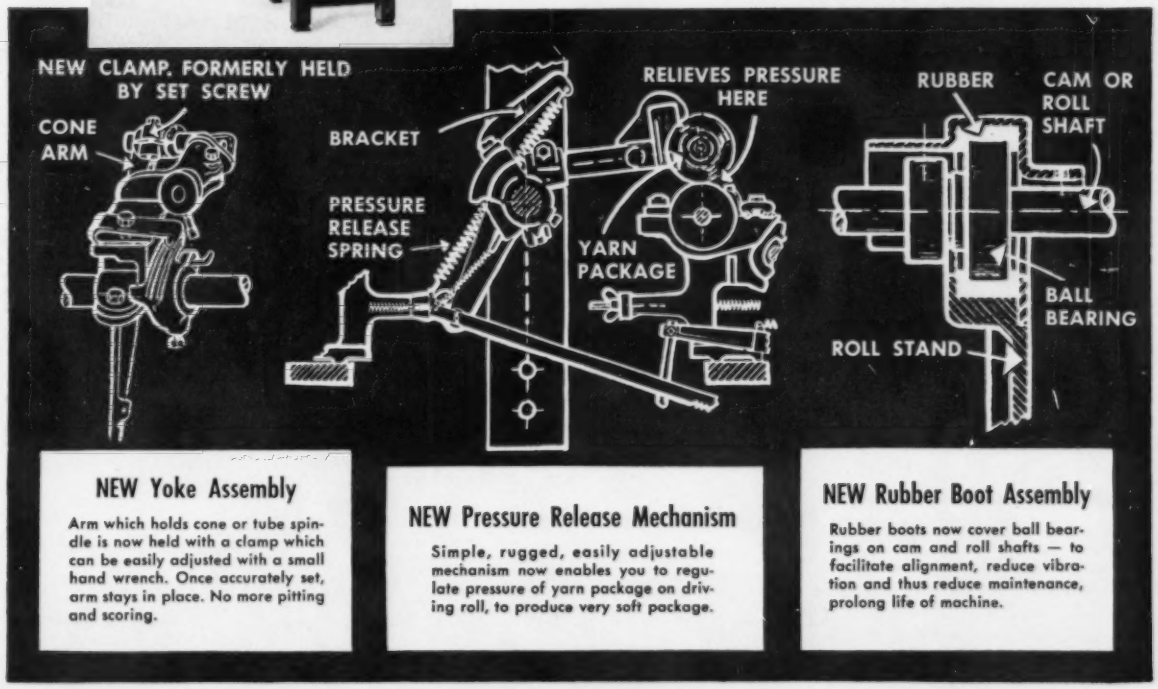
Completely equipped with cloth guides and an automatic seam-detecting device, the machine will operate up to 110 yds. per min. through a variable-speed gear.

The cutters are individually driven by direct-connected motors and are stopped automatically when seams appear.

Each shear is equipped with its own dust-exhaust system, which delivers lint and clippings from the cutters to a bag-shaped air filter that can be removed easily for cleaning.

**Circle T-4 on Reader-Service Card**

# FOSTER
## MODEL 102 WINDER




**NEW Yoke Assembly**

Arm which holds cone or tube spindle is now held with a clamp which can be easily adjusted with a small hand wrench. Once accurately set, arm stays in place. No more pitting and scoring.

**NEW Pressure Release Mechanism**

Simple, rugged, easily adjustable mechanism now enables you to regulate pressure of yarn package on driving roll, to produce very soft package.

**NEW Rubber Boot Assembly**

Rubber boots now cover ball bearings on cam and roll shafts — to facilitate alignment, reduce vibration and thus reduce maintenance, prolong life of machine.

## Foremost in Flexibility — Continuously Modernized

The Foster Model 102 produces cones with increased taper, assuring free delivery at the knitting machine. It was first to produce the open wind cones most suitable for knitting and will wind any type or count of spun yarn . . . will provide 9 different angles of wind from 9° to 18°, just by changing a few gears . . . can be readily equipped with a conditioning attachment . . . will produce a variety of cone tapers . . . will wind dyed yarn even when damp . . . can be built to wind 6" or 7" traverse knitting cones, warping cones, parallel tubes or dye packages — or short traverse cheeses.

Outstanding flexibility has made the Foster Model 102 preferred choice for many purposes for years. It holds its pre-eminence because our policy of continuous modernization constantly improves on its overall efficiency and its already long life expectancy . . . though improvement on some features may be impossible. A few relatively new improvements are illustrated herewith.

*Send for Bulletin A-95.*

Complete data — no obligation.

**FOSTER MACHINE COMPANY**

Westfield, Massachusetts, U.S.A.

*Southern Office, Johnston Bldg., Charlotte, N. C.*

*Canadian Representative*—Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.

*European Representative* — Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England

## Cloth-Handling Truck

Lewis-Shepard, Watertown, Mass., announces a new high-lift JackStacker for storing cloth in textile storage areas. Remote controls make it possible to completely operate the lift from the fork carriage of the truck.

All controls, including direction, brake, traction speeds, lifting, lowering, horn, and steering wheel, are in one convenient location against the backplate of the fork carriage.

Because the operator can raise himself to pick cloth from higher shelves, goods for orders can be stacked to the ceiling. The operator does not have to dismount from the truck to move it.

**Circle T-5 on Reader-Service Card**

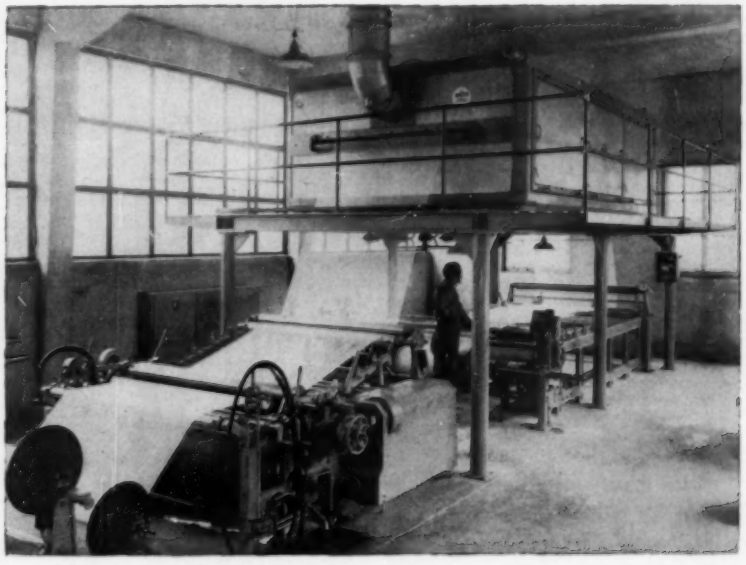
## Overhead-Drying Slasher

A slasher, Model LSMA, with an elevated single-track dryer is being produced by Ruti Machinery Works Ltd., Ruti (Canton of Zurich), Switzerland.

On a cotton warp of 60/2 yarn with 5,872 ends, the output is 485 lbs. of sized warp per hour with 8% moisture content and 7% size.

The overhead dryer is said to let the operator watch the entire operation from one position. It is heated with hot water or steam of any desired pressure.

Features claimed for the slasher are: (1) close control of the warp tension in both the wet and dry sections, (2) it is available with one, two, or three pairs of squeeze rolls, (3) operation and regulation are easy, and (4) it requires little maintenance.



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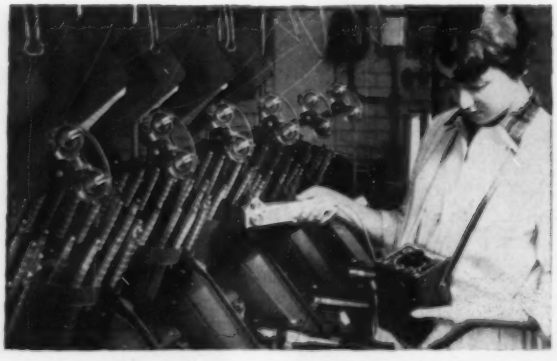
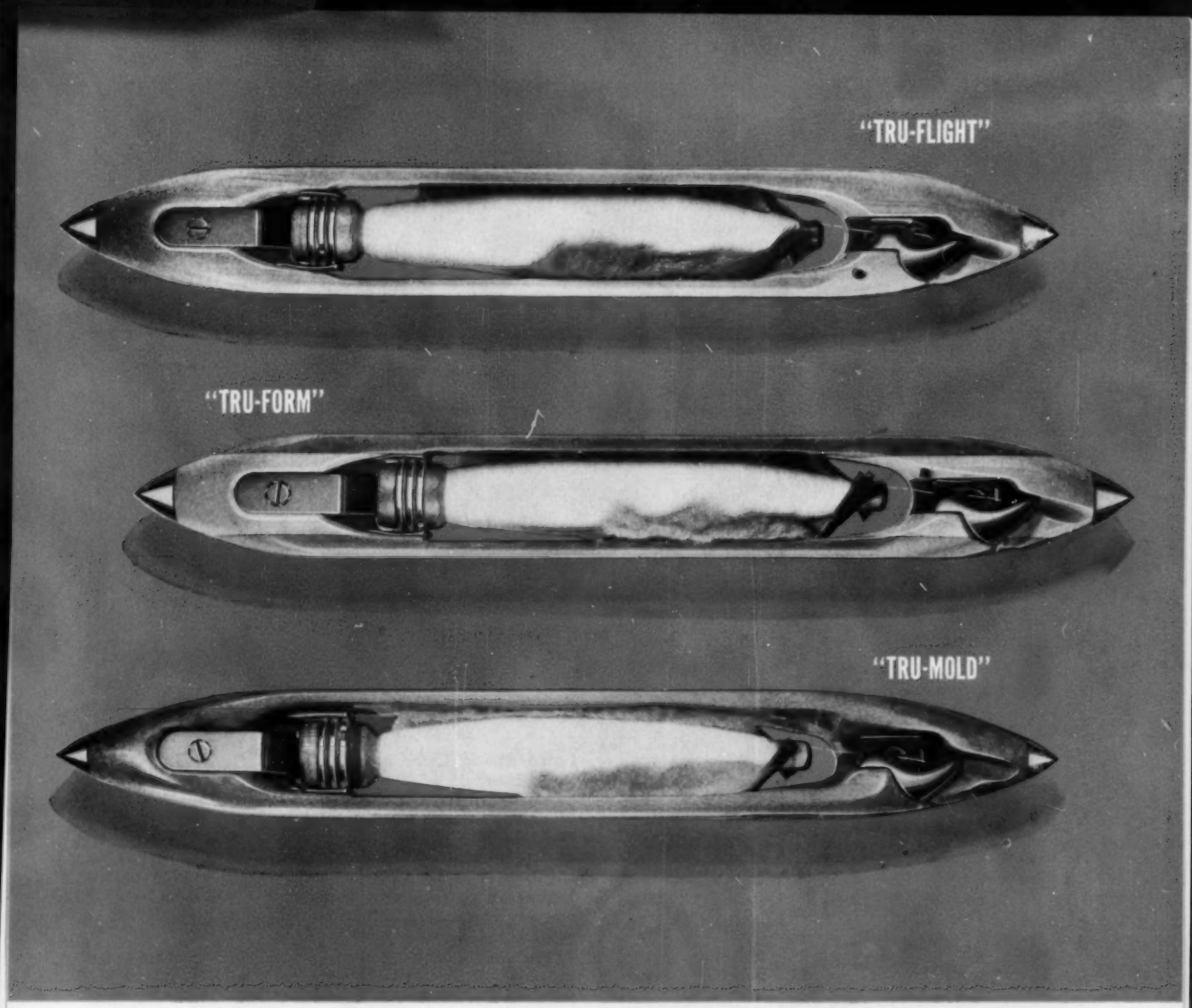


## Yarn-Speed Meter

An instrument called Speedotex for measuring the speed of yarn is manufactured by Duke and Briggs Engineering Co. Ltd., Manchester, England. Antex, 3 Tower Hill, London E-C-3, is the export distributor.

The device is used to measure the speed of the yarn as it is fed into the machine. Although designed to measure yarn speed, it also levels up any number of feeds on knitting machines and saves over two hours in setting up the machine. The device is also used for measuring spindle speeds with great accuracy.

**Circle T-7 on Reader-Service Card**




# REDUCE WEAVING COSTS WITH DRAPER SHUTTLES

*Longer shuttle life* and *reduced maintenance* are two distinct ways in which Draper shuttles aid in lowering weave room costs. The desire to furnish a shuttle that will meet exactly the conditions under which the mill plans to use it has resulted in the manufacture of a wide variety of Draper shuttles.

"TRU-FLIGHT", "TRU-FORM", and "TRU-MOLD" shuttles incorporate the finest in materials and design. From all-dogwood to the completely new molded construction, each is engineered to offer *greater shuttle economy* and *improved loom operation.*

Lower *your* weaving costs . . . standardize on Draper shuttles, today.

**DRAPER CORPORATION**

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

## Gas-Fired Dry Can

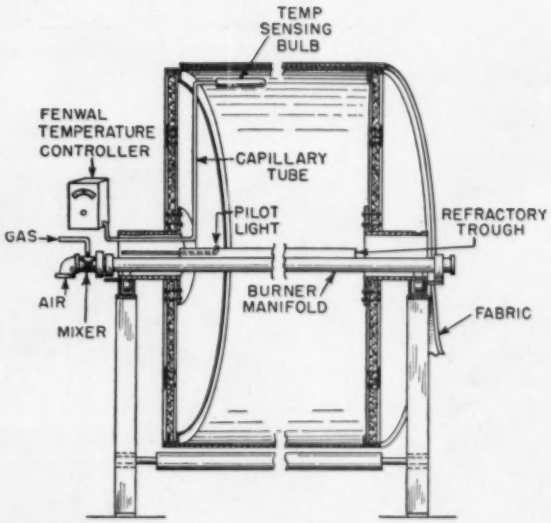
Greatly improved control of heat at the surface of the dry can is claimed for this unit developed by Infra-Red Heat Co., W. Paterson, N. J.

The can is designed to be used for drying or heat-setting and is usually operated at a surface temperature of 350 to 400° F., but it can be heated to 700° F. if desired.

The heat source is a gas-air burner combined with a refractory trough that becomes incandescent and produces infrared rays.

Temperature control is through a Fenwal Series 540 controller. A bulb mounted within an inch of the surface of the drum senses the heat and operates the control mechanism. A range of 200 to 700° F. is provided on the standard controller, which can be set to an operating differential of ¼% of scale.

The can surface is made of 16-gauge stainless steel, which provides rapid heating and cooling. When a shutdown occurs, air that is used in the gas burner continues to flow so that the can surface is rapidly cooled and fabrics in contact with the can will not scorch.

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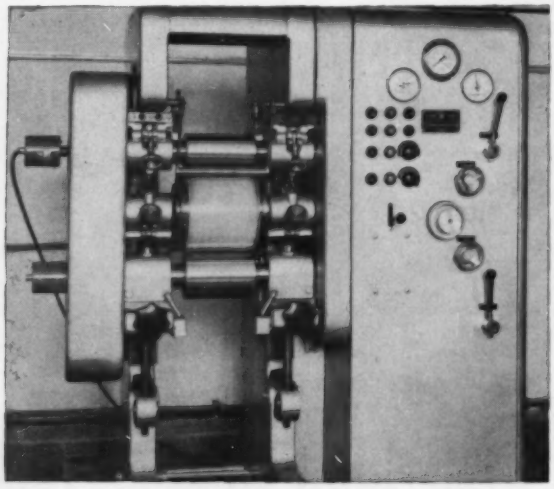


## Laboratory Calender

Designed to duplicate the effect of a plant-size calender, this small machine will produce rolling, glazing, embossing, and frictioning effects on samples at the laboratory stage of development.

Pressures to 13,200 psi. can be produced by hydraulic loading. A variable-speed drive gives speeds from 3 to 20 yds. per min., and friction can be applied up to 300% of cloth travel.

The rolls may be heated electrically and are mounted so as to be easy to change to get different effects. The calender is made by Dr. Ramisch & Co., GmbH Maschinenbau, Krefeld, Germany.

Circle T-9 on Reader-Service Card

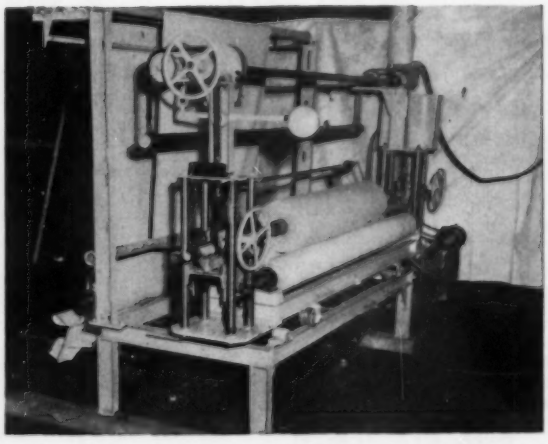
## Cloth Batcher

A cloth-rolling and measuring machine that produces perfectly wound rolls of fabric with little tension has been marketed by Tailor-Made Co., 165 Parker St., Lowell, Mass.

The roll carriage follows the cloth rather than the cloth being guided to a definite position in this machine. Electrically operated feelers judge the cloth position and actuate the carriage to maintain straight-line rolling.

The machine can be supplied to work with or without arbors and at any desired width. Two lint-free gear-head motors supply power through chain drives.

Circle T-10 on Reader-Service Card



Now there's a better way to carry

# textile fibers

to market

Here is a MICARTA® shipping bobbin developed especially to withstand the squeeze of tightly wound textile fibers. Currently in use by one of the world's largest textile producers for the shipment of textile fiber, this new bobbin is proving itself ideal in a punishing application. Its remarkably high resistance to compression, impact and moisture absorption is seeing it through a record-breaking number of round trips from plant to converter without damage to bobbin or fiber.

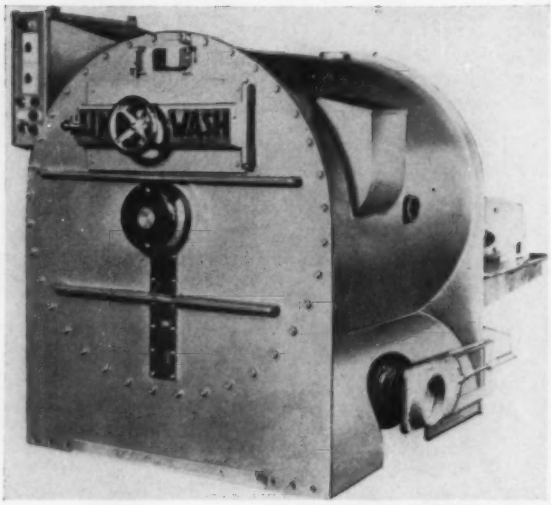
Let us show you how this amazing new MICARTA bobbin can perform for you. Write Westinghouse Electric Corporation, MICARTA Division, Hampton, South Carolina. J-06609

YOU CAN BE SURE...IF IT'S Westinghouse

micarta®
*textile products*



For more data, write this page number on Reader-Service card. →

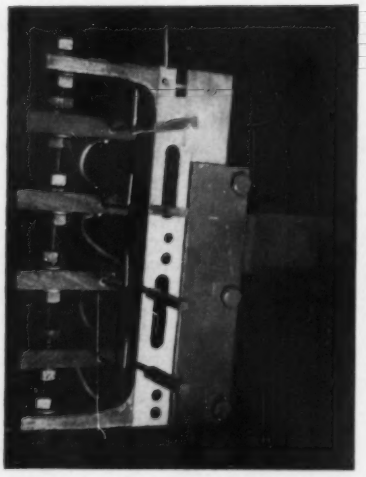


## Washer-Extractor Unit

A combined washer and extractor for sweaters, scatter rugs, and other small textile articles has been marketed by G. A. Braun, Inc., Empire Bldg., Syracuse, N. Y.

A 45-min. cycle washes, extracts, and shakes out the load of fabric without between-step handling. Models are available to handle 35 to 40 lbs., 50 to 55 lbs., 100 lbs., and 200 lbs. per load.

**Circle T-11 on Reader-Service Card**

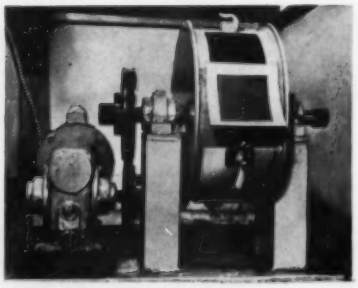


## Loom Stop Motion

A feeler stop motion for 4x4 drop-box looms being operated pick-and-pick is announced by A. D. L. Co., 156 N. Seventh St., Paterson 1, N. J. The feeler is effective on paper, wooden, and metal-ferrule bobbins.

With the feeler, the loom is stopped before the filling is run off the quill. The loom stops when the warp shed is open before the shuttle boxes change.

**Circle T-12 on Reader-Service Card**



## Accelerated Soil Tester

A laboratory machine manufactured by Custom Scientific Instruments, Inc., Kearny, N. J., provides a method of soiling specimens for the evaluation of soil-retardant finishes. The machine is a ball mill into which the test fabric and a perforated capsule of soil are introduced. The mill rotates at 60 rpm. and distributes the soil evenly on the fabric being tested. Four samples 5x5 ins. can be run at one time.

**Circle T-13 on Reader-Service Card**

## Felting Machine

A felting machine manufactured by Anton Guillot K. G., Germany, has been developed to produce sample felt pads for wool, blends, or color samples for pressed felt or woven fabrics.

The machine has a felting mechanism that consists of a number of elastic intermediate parts attached to the upper part of the housing. A bearing, located in the middle of the upper part, permits easy operation of the excenter and excenter shaft. The machine operates quietly and rapidly.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y., is American sales representative.

**Circle T-14 on Reader-Service Card**

# HERE'S HOW
## *to solve finishing problems*

### problems of padding:

uneven extraction . . . high liquor retention . . . shading . . . uneven pressures . . . poor penetration . . . resin mark-off . . . low abrasion resistance; these and other problems are greatly reduced by the Rodney Hunt Niptrol® Mangle which provides uniform nip across the full roll width. Send for complete information, contained in Bulletin 54.

### problems of washing:

tension . . . low speed . . . high maintenance cost . . . poor washing; Rodney Hunt's Tensitrol® washers provide efficient, fast washing of most fabric weights and contribute to the hand and appearance of the finished goods. Catalog 849 has full information on Tensitrol Open Width and Rope Washers.

### problems of bleaching:

costly kier system . . . rope marks . . . high chemical loss . . . spotty bleaching; bleaching ranges are made by Rodney Hunt for both Becco and DuPont systems. Bleaching Rangettes®, for capacities from 250 to 1500 pounds per hour, full-size ranges for the largest mills, or combinations of both; all are described in Catalog 103. Ask for your free copy.

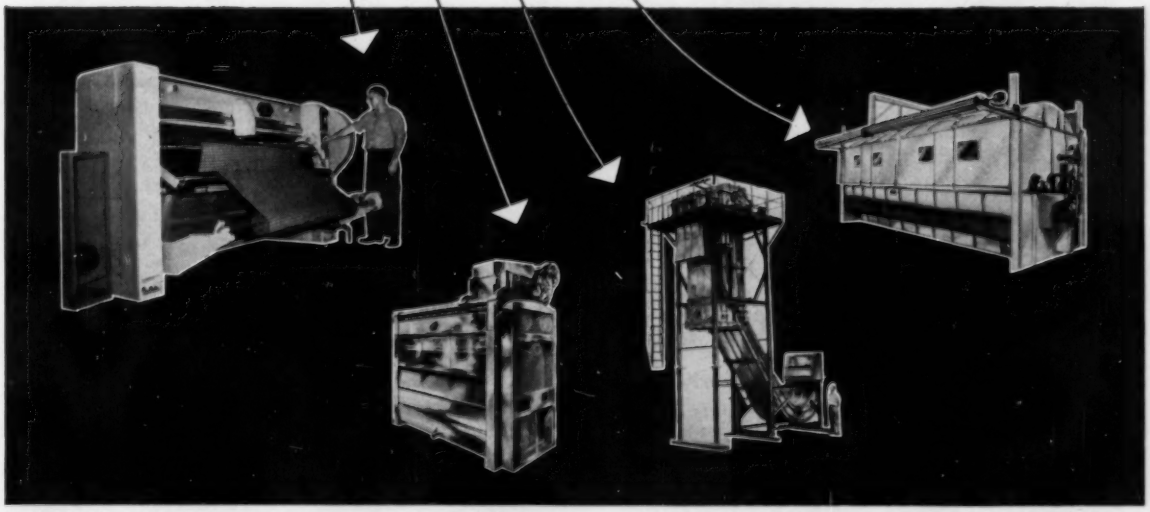
### problems of dyeing:

chafe marks . . . shading . . . excessive dye consumption . . . tension . . . uneven dye distribution; these troubles are solved with Tru-Shade® Dye Becks which give efficient, uniform dyeing and quick change-over from shade to shade. Write now for details of the Rodney Hunt Tru-Shade design.

### Other Rodney Hunt Finishing Equipment

includes Pad Steam Dye Ranges, Desize Ranges, Wringmaster® Squeezers, Padders, the Barotor, Slack Loop Washers, Scutchers, Rolls and Reels.

In over a century of service to the textile industry, Rodney Hunt has amassed a wealth of specialized process knowledge and experience. Put us to work on your problems.



**RODNEY HUNT MACHINE CO.**
**TEXTILE MACHINERY DIVISION**
**66 MILL ST., ORANGE, MASSACHUSETTS, U.S.A.**

RODNEY HUNT®



For more data, write this page number on Reader-Service card. →

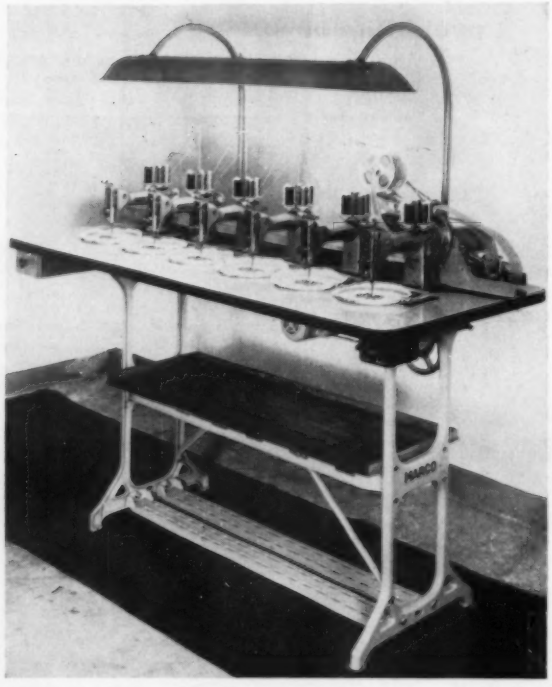
## Hosiery-Inspecting Machine

The Marvel-X machine, made by Marvel Specialty Co., Inc., Box 125, Paducah, Ky., is an automatic machine for inspecting and turning all types of infants', children's, and men's hosiery.

One operator can get as much production as two inspectors can on the conventional flat-board method. The machine automatically counts the hosiery.

There is a semiautomatic change for turret-mounted forms, and the machine is convenient for bagging or boxing. The machine takes up little room and operates from 110 v.

**Circle T-15 on Reader-Service Card**




## Embroidery Machine

The Marco four- and six-head automatic embroiderer for series production of small surface designs is announced by Alfred Hofmann & Co., 629-635 59th St., West New York, N. J.

An unskilled operator can tend up to three machines, which work at 275 stitches per minute per head. Cross, back, Toledo, Maderia, and other stitches can be made on different materials ranging from the coarsest to the finest.

Silk, rayon, cotton, and worsted threads can be used on such articles as bed and table linen, blouses, women's underwear, children's garments, handkerchiefs, gloves, and badges.

The machines operate with jacquard cards. No marking or drawing of embroidery patterns is needed. The embroidery area is 100x250 mm. The reversing frame is 8x5 ins. About 5,000 uniform embroidery designs can be turned out with one jacquard card.

The machine stops at thread breakage, crossing of embroidery area, changing of the thread or needle, and the ending of the card.

**Circle T-16 on Reader-Service Card**

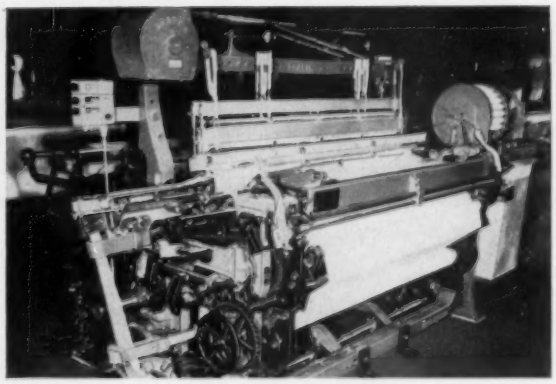
## Improved X-2 Loom

Draper Corp., Hopedale, Mass., has adapted its X-2 loom to weave a wider range of fabrics, including fine-cotton and filament- and spun-rayon fabrics.

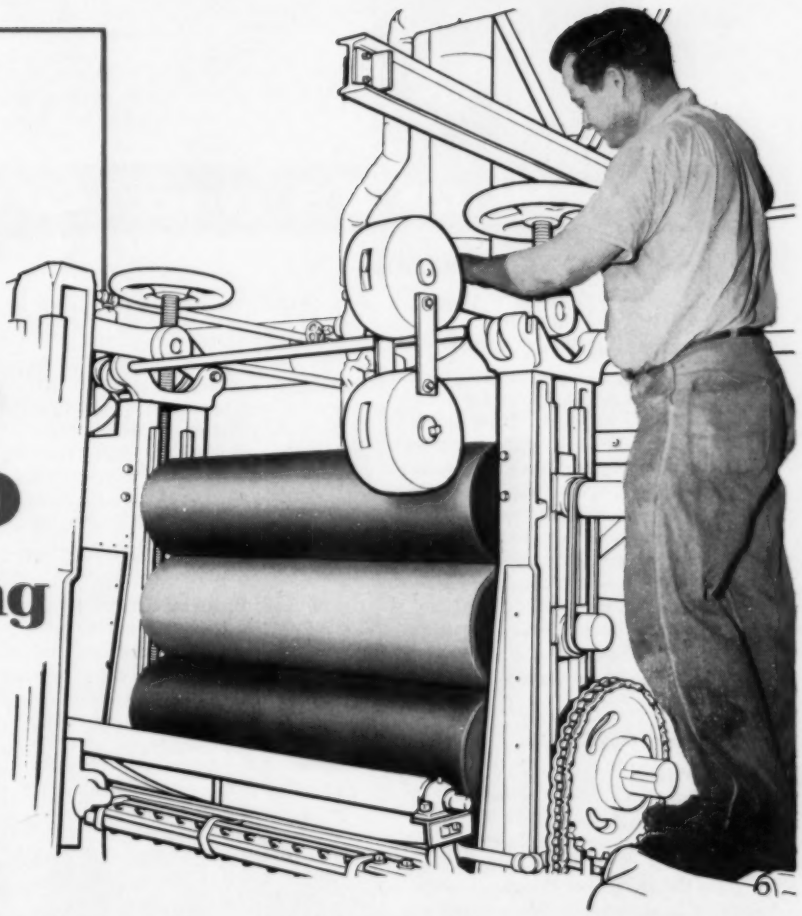
Improvements that make it possible to weave these fabrics are (1) a new design of high-roll ratchet take-up with double rubber-covered take-up rolls and other silk-type take-up-roll features, (2) dobby or clock-spring-top harness motion, (3) center-fork filling stop motion, and (4) linkage-type parallel assembly with aluminum pick arm and lug-strap connection.

**Circle T-17 on Reader-Service Card**

CONTINUED ON PAGE 195



# REDUCE CHANGE-OVER with longer lasting DAYCO Finishing Rolls



The one most important reason Dayco Finishing Rolls give you longer service life—with far less need for grinding and changing rolls—is Dayton's scientific method of designing and building every roll. It's called "job-engineering" and it assures you a finishing roll that's built to do just one job—the job you want it to do.

To resist the abrasion of cloth under thousands of pounds pressure, Dayco Roll Engineers have developed compounds possessing tremendous tensile strengths. For operation in chemicals or oils, special compounding of materials give Dayco Rolls the utmost resistance to surface deterioration. In addition, every other factor involved in wear of your roll is specifically compensated for in Dayco Finishing Roll construction.

Small wonder they stay in operation longer. And as a result, the cost of maintenance, the cost of machine downtime, and your over-all roll recovering costs are substantially reduced.

You can get additional service from every roll now in your mill with the Dayco Preventive Maintenance Program. It's a planned program of roll care. As part of the program a Dayco Roll Engineer will survey your rolls, if you wish, and make suggestions as to the best methods of extending their service life.

For further information on the Dayco Preventive Maintenance Program and full money-saving facts about the Dayco Finishing Roll, write The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

©D. R. 1956

Dayton Rubber 51 YEARS OF PROGRESS

DAYCO ROLLERS . . . FOR OFFSET, LETTERPRESS, NEWSPAPER, GRAVURE, ANALIN, COATING, GRAINING, STEEL MILLS, TEXTILE MILLS, DAYCO OFFSET BLANKETS, DAYCO FOUNTAIN DIVIDERS, DAYCO COLOR SEPARATORS.

DAYTON RUBBER CO., Holfast Div.
1486 Lakewood Ave., Atlanta, Ga.

Gentlemen:

Please rush me "All the money-saving facts about the New Dayco Finishing Roll".

Name_____

Position_____

Company_____

Address_____

City_____ State_____

# NEW DYES and CHEMICALS

## Water Repellent for Wool

**Hydro-Pruf AB** . . . a silicone-base product developed especially for making wool water repellent. The emulsion contains its own catalyst and is supplied as a water-dispersible paste. Because wool does not withstand the high curing temperatures required for most silicone-type water repellents, this product has been designed to produce effective water repellency at curing temperatures in the range 250 to 260° F. Arkansas Co., P. O. Box 210, Newark, N. J.

**Circle D-1 on Reader-Service Card**

## Bleaching Assistant

**Arko Buffer N** . . . reduces objectionable fumes and retards corrosion in stainless-steel vessels when it is added to sodium-chlorite bleaching baths. The product is used at a rate of 3 to 6% on the weight of the goods or an amount equivalent to the amount of sodium chlorite. The pH of the bath may be adjusted, preferably with acetic or formic acids, but nitric or sulfuric acids may be used if desired. Arkansas Co., P. O. Box 210, Newark, N. J.

**Circle D-2 on Reader-Service Card**

## Vat Dye

**Indanthrene Dark Brown MR Infra Paste** . . . dyes deep, reddish-brown shades on cotton and rayon. The color may be used as a self shade or as a component in other brown combinations. Fastness to light varies from 6 to 7, depending on the depth of shade. Washfastness is excellent. Resistance to chlorine and peroxide bleaching is excellent, as is the resistance to mercerization. Not suitable for awning fabrics. General Dyestuff Co., 435 Hudson St., New York 14, N. Y.

**Circle D-3 on Reader-Service Card**

## Vat Dye

**National Carbanthrene Direct Black 3G Double Paste** . . . an anthraquinone vat dye that produces greenish-black shades on cotton and rayon. The dye exhibits maximum lightfastness and excellent fastness to most wet processing. Application can be by the pigment-pad process, reduced bath, or printing. The color is unaffected by metals in the bath and is recommended for goods going into resin finishes or rubberizing. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

**Circle D-4 on Reader-Service Card**

## Disperse Dye

**Artisil Scarlet GFL Ultradispersed** . . . produces brilliant yellow shades on acetates, with exceptional light and wetfastness. The color resists gas fading and sublimation and is suitable for nylon, polyester, and acrylic fibers. High-temperature dyeing processes are recommended for the latter. Sandoz Chemical Works, 61 Van Dam St., New York 13, N. Y.

**Circle D-5 on Reader-Service Card**

## Flame Retardant

**Celluflex CEF** . . . trichlorethyl phosphate, is offered as an ingredient in coating formulas and polyurethane and polyester foams to cut down flammability. Small amounts added to the usual formulas make the final product incapable of sustaining combustion once the source of heat is removed. Celanese Corp. of America, Chemical Div., 180 Madison Ave., New York, N. Y.

**Circle D-6 on Reader-Service Card**

## Silicone Emulsion

**Cravaco A.P.S.** . . . is a silicone product designed to improve wash-and-wear finishes applied to cotton fabrics. Increased abrasion resistance, increased tensile strength, and more-rapid drying are imparted to fabrics finished with this product plus the usual resins. Cravenette Co. U.S.A., 8th and Madison Sts., Hoboken, N. J.

**Circle D-7 on Reader-Service Card**

## Acrylic Emulsion

**Wicaset EHF** . . . a film-forming emulsion that fuses at 250° F. to a tough film resistant to hot oil, boiling water, light, or heat. Supplied at 50% concentration, the product may be sprayed, impregnated, or coated on textiles or paper. The film is tasteless, odorless, and flexible. Wica Chemicals, Inc., Old Concord Rd., Charlotte, N. C.

**Circle D-8 on Reader-Service Card**

CONTINUED ON PAGE 195

## Kylan—New Shrinkproof Material for Wool

Wool will retain its dimensional stability to within 5% after 12 wash cycles when treated with Kylan, a product that is being marketed by Moretex Chemical Products, Inc., Spartanburg, S. C.

Kylan is a derivative of the shells of shrimps and other crustacea and is very similar to cellulose in structure except that it carries an acetamino group. In this form, it is known technically as chitin. Deacetylation to a suitable degree produces the product useful in making wool shrinkproof.

The product is applied from a solution containing an organic acid such as acetic, formic, citric, or lactic acid.

Wool fabrics are treated with acid solutions of Kylan at a concentration designed to leave 3% solids on the fabric. In commercial trials, Kylan has reduced shrinkage in wool fabrics from 40% to less than 5% after 12 commercial-laundering operations.

Experimental work has shown that Kylan can be spun into fiber and cast into films. It is a protective colloid and as such is a useful emulsifying agent and stabilizing agent for acidic emulsions and water repellents.

Like a claw, Dow chelating agents firmly grasp and hold metal ions in solution, preventing them from undergoing the usual chemical reactions. But why so many Versene products? Are they effective on all metallic ions? We hope this continued discussion provides the answers, and further clarifies what chelates will do—and won't do.

DOW

# The Chemistry of Chelation: Part III

## *Specific agents for specific conditions · Caustic solutions Changing solutions · Industry responds*

**In all, Dow offers 15 commercially available chelation products. These are grouped in the Versene®, Versenol®, and iron specialty (Versene Fe-3 Specific®, Versene T®, Versene S) series. The Versene and Versenol series were discussed in Part II of this advertisement. When used in solution, the Versene products inactivate practically any polyvalent metallic ion they contact. They accomplish this by actually forming a new compound in which the metal ion becomes a member of a stable inner ring structure in the molecule, so that no reversion or breakdown can occur. However, no one chelating agent can complex all metal ions under all conditions. One of the major considerations determining which chelating agent to use is pH. To illustrate, let's look at iron-containing systems, among the most troublesome for chemical processors.**

### SPECIFIC AGENTS FOR SPECIFIC CONDITIONS

The first amino acid type chelate made commercially available was Versene, the tetrasodium salt of EDTA*. It is the most versatile member of the series for it ties up most polyvalent metal ions throughout the pH range—with this notable exception: It is excellent for complexing iron in the acid range only. For economy above pH 7, we must look to a later development, Versene Fe-3 Specific.

The most effective and efficient agent known for complexing iron in the mildly alkaline pH range, Versene Fe-3 Specific also chelates copper, nickel, and cobalt—but has no effect on calcium, magnesium or other common non-transition metal ions. Where calcium and magnesium along with iron cause difficulty in alkaline solutions, a blend of Versene and Versene Fe-3 Specific is the answer. This mixture, called Versene Fe-3, complexes all of these troublesome ions. Its Versene Fe-3 Specific content is sufficient so as to automatically take care of the quantity of iron normally encountered in hard water.

Versene Fe-3 is also considered an important adjunct to the polymerization of synthetic rubber. It controls the concentration of the iron ions catalyzing the reaction, thus insuring a more-uniform, higher-quality end product.

### CAUSTIC SOLUTIONS

For chelating iron in caustic solution, another agent enters the picture—Versene T. This material ties up iron in a wide range of caustic solution concentrations. It also complexes calcium, magnesium, nickel, cobalt, and other metal ions—throughout the normal pH range as well as in caustic solutions. In the presence of a suitable reducing agent, Versene T functions effectively as a rust remover—and without the drawbacks of acid cleaners. Versene T thus finds widespread use in boiler and heat exchanger cleaning, textile processing, etc.

Another effective chelating agent that is selective for iron in the free caustic pH range is Versene S. Since it will not chelate alkaline earth ions, Versene S is especially suitable for use in silicate-lined textile processing kiers.

### CHANGING SOLUTIONS

In special instances where a processing solution is strongly alkaline at first, then changes to neutral or to acidic, iron can be controlled with a mixture of Versene T and Versene Fe-3 Specific. In this combination, the Versene T component complexes the iron when the solution is caustic. As the pH drops, Versene Fe-3 Specific takes over.

### INDUSTRY RESPONDS

Every day, Dow chelates are finding new and expanding usage —in textile manufacturing and rubber processing, in soaps, synthetic detergents, cosmetics, and pharmaceuticals. Their ability to control ionic concentrations, to eliminate product breakdown, to smooth out production and save money, has brought enthusiastic response from industry. That they are solving a multitude of processing problems is true. But chelates are no cure-all. To uncover their profitable uses, we will help in any way we can. Write us on your company letterhead for application data and technical assistance. Technical Service and Development, Department SC 913K, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Ethylenediaminetetraacetic acid

**THE NEXT TOPIC IN THIS SERIES**

**PART IV** *October* — Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

*you can depend on DOW CHEMICALS* DOW



For more data, write this page number on Reader-Service card. →

THIS IS NO. 117 OF A SERIES ON

# GETTING THE MOST FROM TWISTING

Information about twisting designed to show improvements in twisting equipment and new ideas in the twisting operation

## HOW TO REDUCE SPINDLE FAILURE

Many bobbins now in use were made before the industry became balance conscious. And, while most of the bobbins now made by bobbin manufacturers are well balanced when new, strenuous use and handling may make some of them become spindle vibrators in time.

We know of a mill that had a tremendous headache with unbalanced twister bobbins and the spindle failures they were causing.

The mill had thousands of twister bobbins and a very sizable installation of twisters on which they were used. Some of the bobbins were causing the spindles to vibrate and wear prematurely. Spindle replacement costs were excessive. In addition to that, the mill found that machine maintenance costs were up generally, for the vibrating spindles were wearing out swings and causing failures on other parts of the machines as well. Power and cleaning costs were up, too, and the oil thrown by the vibrating spindles was spoiling good yarn.

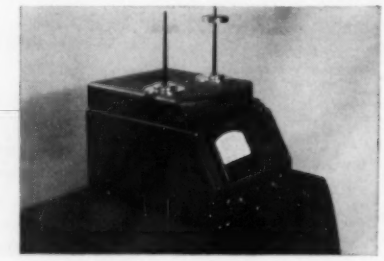
As if that weren't bad enough, they found that the costs of having all of their thousands of bobbins rebalanced by a bobbin manufacturer (merely to correct the relatively small percentage of unbalanced units) — plus shipping costs — just about cancelled out whatever savings they might hope to gain.

They knew that even in mills where bobbin unbalance conditions were considered severe only one-quarter to one-third of the bobbins cause really serious vibration. (In fact, it's much less than that in most mills, but by rotation from one spindle to another on successive doffs the few unbalanced bobbins can, in time, spoil the whole spindle installation.)

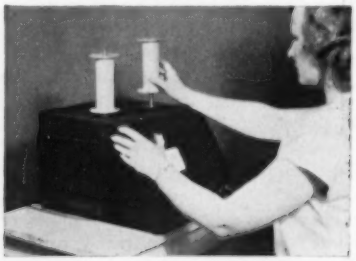
Their problem was: *how to cull out the relatively few offenders inexpensively*. And they solved it by checking their bobbins on a Leesona® Bobbin Balance Indicator. With this instrument they were able to check all their bobbins in their own mill at a very economical cost. Only the bobbins in need of balancing were shipped to the manufacturer for re-working. The result was that they reduced their spindle wear from an abnormally high figure to practically nothing. Equally important, they cut their maintenance and power costs and are producing cleaner yarn.

Now, with a Leesona Bobbin Balance Indicator in their own mill, they check all their bobbins periodically. In this way they guard their spindles against undue wear from unbalanced bobbins.

Perhaps you, too, are faced with the problem of weeding out the few unbalanced bobbins that may be causing premature spindle failures in your mill. If so, why not write us about it? Perhaps we can show you how to overcome that problem with a Leesona Bobbin Balance Indicator.

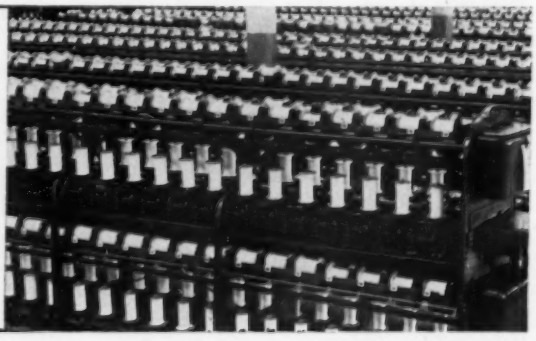


*The Leesona Bobbin Balance Indicator measures intensity of bobbin unbalance in terms of its effect on a spindle. It points out the bobbin that should be reworked or discarded. It can be used for uptwister and ring twister bobbins with capacity up to two lbs.*



*The Leesona Bobbin Balance Indicator is a simple instrument to operate. Here the operator reads the meter indicator for the left-hand spindle while removing an already-tested bobbin from the right-hand spindle.*

*Only a few of the bobbins in this installation may need rebalancing, but unless they are weeded out they may be used on every spindle eventually and cause premature spindle wear.*



July 1956 — 23.6.3

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

LEESONA®

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA LOS ANGELES MONTREAL and HAMILTON

# QUESTIONS and ANSWERS

►TEXTILE WORLD'S editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

## How To Remove Loom Grease From Fabrics

**Technical Editor:**

**How can we wash out dirt, caused by greasy hands, from cotton-rayon jacquard fabrics? (9983)**

To remove dirt from fabrics try this solution:

1 part any good sulfonated oil
1 part xylene

Mix by shaking. If the mixture is cloudy, it can be cleared by adding more sulfonated oil.

Apply the mixture straight and work it into the goods thoroughly. Scour the goods immediately or in less than 2 hrs. Don't let the concentrated oil-solvent mixture dry out on the goods. You might get dyeing troubles.

In most cases the spots will be removed.

## Cap Spinning Is On the Way out

**Technical Editor:**

**Is much cap spinning done in the U. S.? What are the advantages of cap spinning? (9984)**

Very little cap spinning is done on this continent, and the spinners who use cap spinning frames get fewer each year.

The amount of yarn on a bobbin doffed from a cap frame is only a fraction of that compared with the yarn from a ring bobbin. Knots in the ring-spun yarn are, of course, fewer.

Cap spinning is preferred, however, for certain fibers. Coarse wool, mohair, or other coarse fibers spin more evenly on cap frames than on ring frames. The long staple of the coarse material has a tendency to get loose because of the ballooning that occurs during spinning on ring frames.

## A System To Reduce End Breakage

**Technical Editor:**

**What can we do to reduce end breakage on our heavy looms that make woolen and worsted goods? (9974)**

One mill successfully uses two teams of workers to reduce end breakage 50%. One team, consisting of several technicians, checks all operations and keeps a score of the number of end breaks in the warp and filling.

These men report to the production manager several times during the day. If conditions are below standard, the production manager brings the second team into action. This team investigates the cause and corrects the fault.

The first team then checks the operation again to show how effective the measures were to reduce the end breaks. If the results are still unsatisfactory, the investigation is continued until checks show an improvement.

When the system was installed, these facts were brought to light: 30% of all end breaks in warp and filling were caused by faulty yarns; 30% were the result of poor loomfixing, such as poor warp tension and shed setting; 30% were due to bad shuttles, poor stroke adjustment, and bad shuttle boxes; and 10% were caused by faulty warping.

## Treat Absorbent Cotton for 8 Hrs. at the Boil

**Technical Editor:**

**Do you have any information on times, temperature, and concentrations working with sodium hydroxide in purifying absorbent cotton? (9978)**

Although there are variations in the procedures used by various manufacturers, the normal procedure is to bring the kier liquors of sodium hydroxide to an even boil and continue boiling for 8 hrs. at 15 lbs. pressure. The kier liquor should have a 3.5% concentration of sodium hydroxide. There are still some natural oil and wax impurities left, but subsequent washings will remove most of them.

## Fiber Moisture Regain at Various Conditions

**Technical Editor:**

**Do you have any data on the moisture regain of textile fibers at various temperatures and relative humidities? (9976)**

Here is a table showing the moisture regain of seven fibers at various temperatures and relative humidities:

| | | Moisture Regain (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature (F.°) | Relative humidity (%) | Acetate | Cotton | Cupra rayon | Nylon | Silk | Viscose rayon | Wool |
| 75 | 10 | 0.8 | 2.4 | .... | 1.1 | 3.2 | 3.9 | 4.0 |
| 75 | 20 | 1.7 | 3.6 | 5.4 | ... | 5.4 | 5.7 | 7.1 |
| 75 | 30 | 2.4 | 4.3 | 6.9 | 1.7 | 6.7 | 7.4 | 9.4 |
| 75 | 40 | 3.2 | 5.0 | 8.5 | 2.3 | 7.8 | 8.8 | 11.0 |
| 75 | 45 | 3.6 | 5.3 | 9.2 | ... | 8.4 | 9.7 | 11.8 |
| 75 | 50 | 4.2 | 5.7 | 10.0 | 2.8 | 8.8 | 10.4 | 12.6 |
| 75 | 55 | 4.7 | 6.3 | 10.8 | ... | 9.4 | 11.3 | 13.4 |
| 75 | 60 | 5.2 | 6.7 | 11.7 | 3.4 | 9.9 | 12.2 | 14.2 |
| 75 | 65 | 5.9 | 7.3 | 12.4 | ... | 10.5 | 13.1 | 15.0 |
| 75 | 70 | 6.7 | 7.9 | 13.4 | 4.1 | 11.4 | 14.3 | 16.0 |
| 75 | 80 | 8.5 | 9.9 | 16.0 | 5.0 | 14.0 | 17.1 | 18.6 |
| 75 | 90 | 11.3 | 13.6 | 20.3 | 5.7 | 18.4 | 21.9 | 23.2 |
| 70 | 65 | 6.0 | 8.5 | 11.0 | 4.5 | ... | 11.0 | 16.0 |

# 50,000 Reasons Why

## IT PAYS TO BUY A BUTTERWORTH MACHINE

Here's a two-million-dollar inventory of 50,000 *different* Butterworth parts. Actually, it's two million dollars' worth of insurance for you, aimed at uninterrupted, long-life service for every Butterworth machine you buy.

Butterworth parts — all 50,000 of them — are as near to you as your telephone . . . as handy as your freight office. They range from a special diaphragm costing 5¢ to a complete bearing assembly priced at $5,000. Most of them are parts that can be bought singly only at Butterworth. That's because hard-to-get parts are Butterworth's stock in trade. In 19 out of 20 emergencies, the item you need will be on its way to you less than 24 hours after we get your order. If yours is the 1-in-20 problem that needs an unstocked part, we'll tell you so at once . . . then work at top speed to meet your need.

When you standardize on Butterworth machines, you add our Parts Department to your plant. That's worth more than a million dollars — in parts.

***Some of the 50,000 "Reasons"***

**Dryer Bearings, Pumps and Controls**
**Gears for Tenters, Calenders and Embossers**
**Flexible Tubing for Dryers**
**Bearing Assemblies for Compartment Washers**
**Guider Parts**
**Siphon Parts for Dryers**
**Tenter Drives**
**Air Cylinders**
**Special Diaphragms**
***and approximately 49,987 other "reasons"***

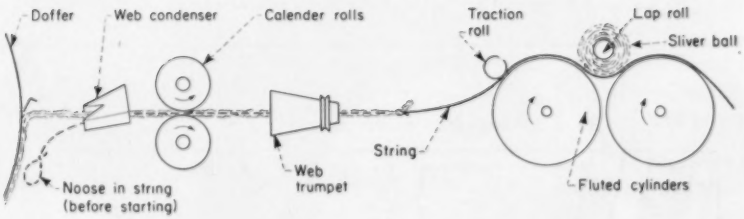
**H. W. BUTTERWORTH & SONS CO.**
**Bethayres, Pennsylvania**
**1211 Johnston Bldg., Charlotte, N. C. • 187 Westminster St., Providence, R. I.**
*Representatives in Principal Cities of the World*
Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing, Embossing, Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

**BUTTERWORTH**
Serving the Textile Industry Since 1820



← For more data, write this page number on Reader-Service card.

# KINKS and SHORT-CUTS




## Easy Way To Thread Web Through Card Condenser

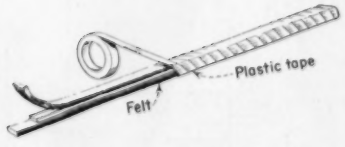
Every time we had to break out the web on our worsted cards for cleaning or running in new stock, we had trouble threading the new web through the condenser and trumpet at the balling head.

The operator, after starting up the card, would try to cram the web through the trumpet; another man would stand by tearing off part of the web to keep it from bunching up in front of the trumpet and jamming it. The operators hardly ever managed to get the web through on the first try, and sometimes they had to stop the machine and start over three or four times. This operation would take as much as 10 mins. and always make some waste.

We worked out a method whereby one man can thread the web in less than 1 min. without any waste at all. Here's how we do it:

A piece of string of sufficient length with a running noose at one end is threaded through the various delivery organs, as illustrated, while the machine is stopped. The noose and some slack is left hanging down in front of the doffer; the other end of the string comes out under the lap roll of the balling head.

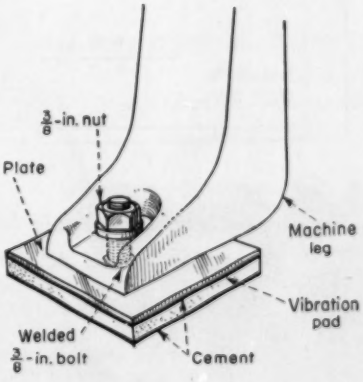
The operator now starts the machine and draws the noose tight around the portion of the web that is coming off the doffer. The traction roll and fluted cylinders automatically pull the string, followed by the web, through the condenser, calender rolls, and trumpet. All the operator has to do is tear off the string when the point of the sliver shows under the lap roll and then wind the sliver once around the roll to start the ball. (K-2985) *Gustav R. Fried, Brazil.*




## Protect Straightedge In a Felt-and-Tape Case

When the straightedge is carried in the tool kit, it is often damaged. A serviceable case can be made of a strip of felt wrapped with waterproof plastic tape. The strip of felt should be long enough to fold and have a flap extending beyond the end of the straightedge.

If the tape is correctly applied, the case will be waterproof and will provide protection against rusting as well as against nicks and scars. (K-2963) *Bob Abott, Berwick, Pa.*




## How To Mount Knitting Machines

Because we constantly move our knitting machines around to comply with seasonal changes, we had to adopt a different way of mounting the machines.

We made a metal plate about 6x6x⅛ in. and welded a ⅜-in. bolt in a hole in the center of the plate. This plate goes between the machine leg and the pads we use to lessen vibration.

The pad is placed on the floor in the desired position after being coated with a layer of cement. Another layer of cement is placed on the pad, and the plate is put in position over the pad. The machine is then moved into place over the plate, and a nut locks the leg to the plate.

A compound is used to dissolve the cement when the machine is to be moved. The pads can then be reused along with the plates. (K-2861)

## Best-Kink Award for May

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for May, according to TEXTILE WORLD reader-judges, was:

**"Winder Modifications Produce Cleaner Cones"**

**By Summey Cauble, Jr., Gastonia, N. C.**

Mr. Cauble is being sent a check for $25 with the compliments of TEXTILE WORLD

## Oil Lifter Rods With Sponge-Tipped Spout

We recently lengthened the traverse from 8 ins. to 9 ins. on some of our spinning frames. We then found that we were using a section of the lifter rods that had not been used before. The rods began to stick and cause an excessive amount of waste.

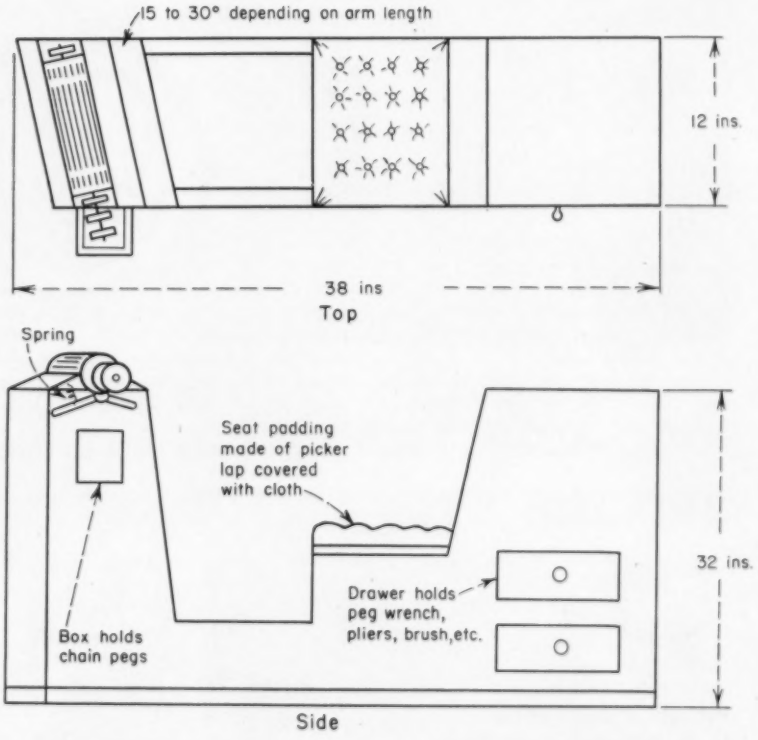
Oiling the lifter rods every 24 hrs. improved the stuck rod problem, but the accumulation of oil on the spindle rail began to give trouble. The oil soaked into the washers of the rubber-mounted spindles and caused them to deteriorate.

To remedy the situation and still keep the lifter rods oiled properly, we devised a tip for the oil-cup spout. The spring-steel part of a paper clip was welded to the spout near its end, with the spout inserted through a hole in the clip. We inserted a small piece of sponge into this clip.

By using the oil can with the sponge tip, we are getting plenty of oil on our lifting rods and none on our rails and spindles. We also find that one man can oil about 20% more rods with this sponge accessory than with the regular oil cup. (K-2998) *L. P. Scarboro, Trion, Ga.*

**$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.**

**Send in your Kink now.**




## Here is an Improved Table for Pegging Dobby Chains

We weave a number of different styles of fabrics, and some types use dobby chains with more than 200 bars per chain. Pegging all these chains is quite a job, but we've made it easier by the use of a compact pegging table.

The table has a dobby cylinder mounted on the front so that the bars can be moved up one at a time as they are pegged. We found that it's easier and quicker to peg directly in front on a vertical plane and with the cylinder at an angle, as shown in the illustration.

The seat is padded, and there are drawers behind the seat for tools. A small box, mounted at the side and beneath the cylinder, holds the extra pegs. This pegging table can be mounted on casters for easy transportation about the mill. (K-2952) *I. L. Langley, Jr., Martinsville, Va.*

# how VEEDER-ROOT CUT METERS

## help cut most of "the blues" out of denims

Most of the "blue notes" are taken out of weave rooms running on denim, where the looms are equipped with Veeder-Root Cut Meters.

**Cuts are uniform in length,** which means many advantages in dyeing, finishing and converting. What's more, your customers like it.

**Double cuts can be run,** instead of single cuts.

**Hard-to-see cut marks are eliminated,** so weavers can concentrate on quality and production. You don't miss what you don't need!

Have your Veeder-Root representative show you exactly how Veeder-Root Cut Meters can save you time and money, and protect your fabric-quality. Write:

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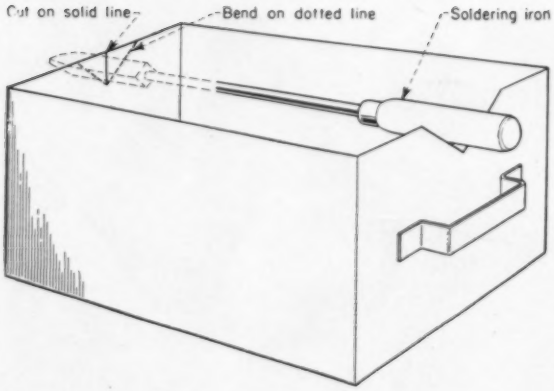
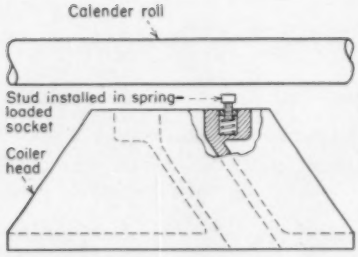



## We Use an Oil Can for a Soldering-Iron Stand

A 1- or 2-gal. oil can makes an ideal soldering-iron stand and also provides storage space for flux, solder, etc. To make the stand, cut out one side of the can and make 1-in. cuts in both ends of the can. Bend the metal back from these cuts as shown on the dotted lines of the sketch. Solder all sharp or rough edges to prevent accidents. (K-2958)



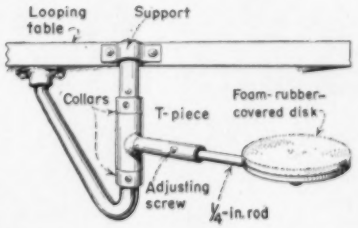

## Simplified Stop Motion For Drawing Frames

The electric full-can stop motion on our 1948 Platt drawing frames is a bit complicated for some of our operators.

A gear on the calender roll drives a second gear on the stop-motion block, which in turn imparts motion to a threaded screw on which a brass piece moves. This brass piece moves forward as the can fills up until it touches a projection on the stop-motion block, closes the circuit, and stops the machine. The operator has to adjust the brass piece after every doff, and sometimes he does not adjust it just right.

We devised a simpler stop motion, as illustrated, that has a stud inserted in a spring-loaded socket fitted on one of the coilers. As the can becomes full, the sliver pushes the coiler upward until the stud comes in contact with the calender roll. This action closes the circuit and stops the machine.

The stud is threaded so that it can be adjusted as required. It is better if the loose plate to which the stud is attached in the spring-loaded socket is suspended in one of the coilers. With this arrangement, the sliver pushes the plate up until the stud touches the calender roll. (K-2932) *I. J. Abraham, India*




## Make Looper's Work Easier

Looping hosiery is a tiresome job, but production can be speeded with several gadgets that make the looper's work easier. Here's one that relieves the strain on the looper's left arm.

The arm rest illustrated is a foam-rubber-covered disk about 6 ins. in diameter fitted to a ¼-in. steel rod. This rod is fitted into an adjustable T-bracket that reciprocates on a vertical shaft fastened under the looping table. The T-piece has collars so that it can be adjusted up or down.

As the stitches are placed on the points and the looper dial rotates, the arm rest moves with the operator's work. (K-3006) *H. J. Haas, Martinsburg, W. Va.*

## Identify and Use Old Roving First

We used to find it difficult to use up old roving first because our roving haulers would grab the first roving they came to and shove it out to the spinning frames. Frequently, roving would be left in the back of our storage area until the tint faded, which made identification difficult throughout the plant. Also, the twist in roving seemed to harden with age and produce bad-running work.

To insure a daily turnover of roving, we made hooks of ⅛-in. wire and hung one on the head of each roving frame. Then we stuck a supply of 5x5-in. sheets of paper on the hooks and instructed the doffers to (1) pull off a sheet for each box as the frames were doffed, (2) date and initial the sheet, and (3) place it on top of the box where it could be seen easily.

The roving haulers now remove the oldest roving first, and it is easy for the assistant overseer to check the age of roving on hand. (K-3020) *William M. Poag, Greer, S. C.*

**$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.**

**Send in your Kink now.**

The best way to please a back-seat driver—anyone's severest critic—is with seat-covers woven of IRC yarn. Most mills have discovered that IRC Continuous Process Rayon turns this so-called "critical" fabric into no problem at all.

It weaves smoothly... dyes like a dream. Headaches evaporate... seconds cease to be a problem. Because IRC's unique continuous process means that every strand of yarn is perfect inch by inch... mile by mile ...which means that the finished product is perfect, too.

This, of course, is no news to the trade. That's why most weavers of seat-cover rayon specify IRC as a matter of course.

The moral is clear. If IRC yarns make your critical problems easier... they're bound to make your easy problems easier still. Why not specify IRC for *all* your rayon needs?

**I·R·C**

**Industrial Rayon Corporation**
**Cleveland, Ohio**

Producers of Continuous Process Rayon Yarns and Tyron® Cord for Tires
Sales Office: 500 Fifth Ave., New York 36, N.Y.

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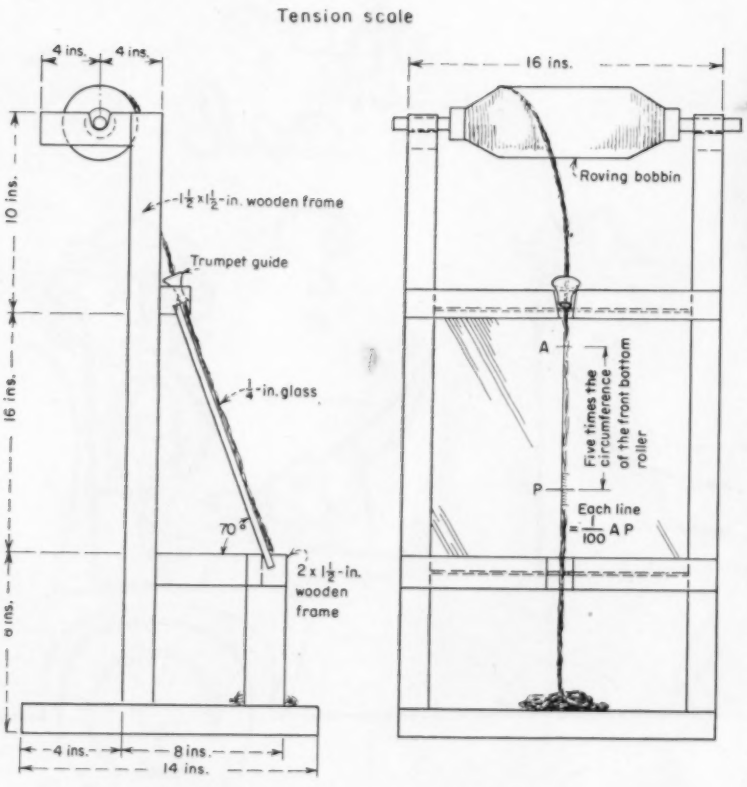



## Scale for Measuring Roving Tension Draft

We find that the control of tension draft on roving frames is essential for good yarn quality because excessive tension causes uneven yarn. We devised a tension scale to measure the amount of stretch in the roving caused by tension draft, and we have used the device in our mills with good results.

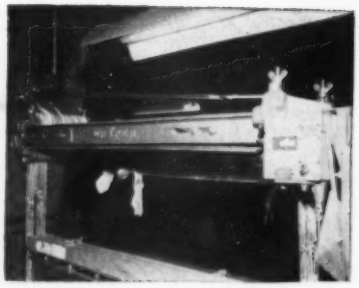
The tension scale is made from wood, a piece of ¼-in. glass about 19 ins. long and 16 ins. wide, and a trumpet. The diagram shows how the scale is built.

To use the device:

Stop the roving frame and make a mark with a soft pencil on the roving about ⅛ in. from the bite of the front rolls. Turn the bottom front roll five revolutions and make another mark ⅛ in. from the bite of the front rolls. Start the frame and wind the marked length of roving on the bobbin. Remove the bobbin from the spindle and place it in the creel of the tension scale.

Then draw the roving through the trumpet down onto the surface of the glass until the second mark on the roving coincides with **A**. The position of the other mark in relation to standard line *P* will show the amount of tension draft or stretch. For example, if the mark is 5% below the *P* line, the tension draft is 1.05. (K-3037)

*Fei-nan Yu, China*



## An Easy Way To Keep Dope-Dyed Fabrics Clean

On our dope-dyed fabrics, lint and dirt from the harness sheaves on our looms drop into the warp yarn and weave into the cloth. And since the cloth is loom-finished, we cannot remove the dirt. We have several methods of keeping the dirt out of the cloth.

One effective method is to move the harness sheaves outside the cloth width. First, we move the right-hand sheaves along the loom arch until the harness cords are plumb with the ends of the harness frame. Then we fasten the harness-sheave-pin stands.

A complete extra set of harness sheaves is added at the left-hand end of the loom. The harness-sheave-pin stand of the extra set is mounted upside down at the loom arch and is set plumb over the ends of the harness frames.

The top harness cords on the left-hand side of the loom are run over the original set of harness sheaves in the regular way, and then they're doubled back over the additional set of sheaves.

A hook is inserted in both ends of each harness, and the harness cords are fastened to each hook with a patented adjusting harness end. This harness end makes the cords long enough to reach over the spread sheaves.

Now, any lint or dust that settles on the harness sheaves falls down by the edge of the cloth and does not soil the cloth. (K-3043)

*W. H. Ballard, Altoona, Pa.*

## Save Time in Counting Hosiery

Our inspectors for years counted hosiery, tied them into dozens, and put 20 doz. in each bag for dyeing. The dyehouse men then had to break them loose for processing.

Our inspectors now have an automatic counter, attached to the inspector's board, that saves almost half the operator's time because manual counting and tying have been eliminated. Time also has been saved in the dyehouse. (K-3039)

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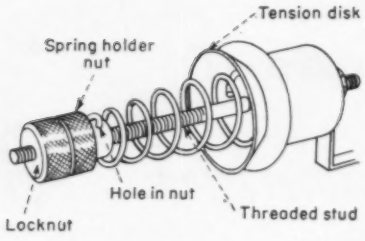
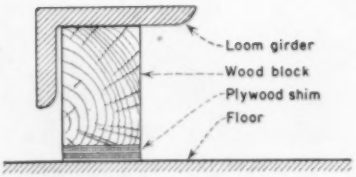



## This Yarn Tension Has Stationary Spring

I believe that we have developed a yarn tension superior to and less costly than the one described on page 172 of your February issue. I note that the holding nut on the tension described must be turned one or more half-turns to change the adjustment, and I doubt that an adjustment can be obtained that is satisfactory for fine worsted yarns.

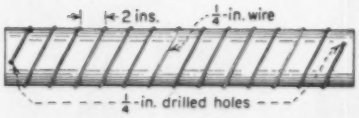
We made a similar tension by drilling a small hole through the holder nut and bending an end ¼ in. long on the small end of the spring and fitting it into the hole. The nut was then put on a headless screw and locked with another nut. The upper nut is used as a drill jig.

This arrangement prevents the spring from turning when it is being cleaned of lint and slubs. The spring maintains even tension if the disks are perfectly flat. When you get the right tension, hold the inside nut with pliers and tighten the outside nut. The nuts will not work loose. (K-2948) *Walter A. Simond, Essex Junction, Vt.*




## Use Wood Blocks To Reduce Loom Vibration

To relieve excessive vibration of looms on a shaky floor, we installed 2x4-in. wood blocks under the front and back girders. Plywood shims were used to obtain a snug fit. The blocks spread the loom weight over a larger floor area and relieved the floor under the loom feet. Vibration of the loom and floor was greatly reduced. (K-2846) *Albert Frantz, Berwick, Pa.*




## Prevent Split Laps With Wire-Wound Roll

In running synthetic-fiber or large cotton laps on the picker, we used to have a lot of trouble with split laps.

We corrected this situation by winding a spiral of ¼-in. wire around the weight roll on the front of the picker. The spirals are 2 ins. apart.

An easy way to wind the wire on the roll is to place the roll in a lathe. A ¼-in. hole is drilled in each end of the roll. One end of the wire is welded or leaded securely into one of the holes. Tension is applied to the wire as the lathe slowly turns the roll. When the winding is completed, the free end of the wire is secured in the other hole.

The wire-wound weight roll completely eliminated our split laps. (K-2827) *S. M. Cauble, Jr., Gastonia, N. C.*

## $500 for Best Kink in 1956 - - - $25 for Best Kink Each Month

**Plus $5 to $10 for Every Kink Accepted**

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

**RULES OF CONTEST**

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calender year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
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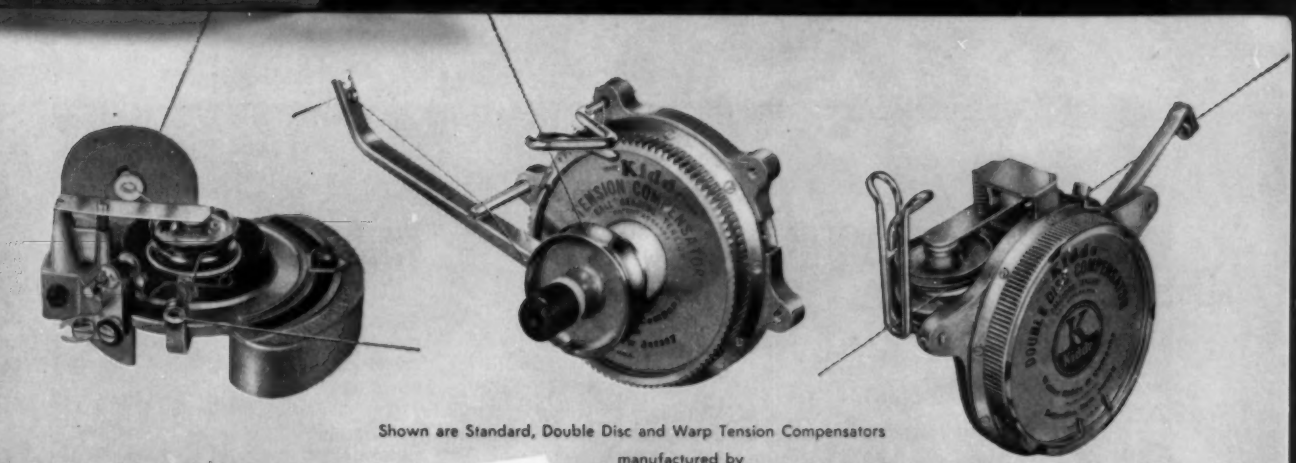
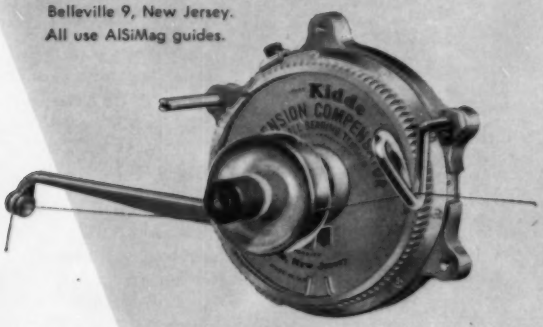


Shown are Standard, Double Disc and Warp Tension Compensators manufactured by Walter Kidde & Company, Inc., Belleville 9, New Jersey. All use AlSiMag guides.

# ALSiMAG®

assists in

## tension regulation!



AlSiMag tension posts and eyes are standard equipment on high quality Kidde Tension Compensators. Important advantages for this and dozens of similar applications:

**Superior Wear Resistance.** AlSiMag guides are hard and homogeneous. Wear is extremely gradual . . . can hardly be detected . . . simply reveals new surfaces exactly like the original.

**Uniform Finish.** Aids in maintaining uniform tension. AlSiMag guides have uniform coefficient of friction.

**Precision.** AlSiMag guides are precision made, both physically and dimensionally. Manufactured to highest quality standards and exacting tolerances.

**Economy.** Longer life is an important advantage of AlSiMag guides. So is their lower cost per pound of processed yarn.

Kidde No. 202373 AlSiMag No. GE-22176 | Kidde No. 240844 AlSiMag No. GE-27890 | Kidde No. 202055 AlSiMag No. GE-20757

These are the AlSiMag guides (approximately actual size) used so successfully in Kidde Tension Compensators. Material is AlSiMag 193—a conductive composition useful for dissipating static. Replacement guides can be ordered for immediate shipment from Walter Kidde & Company, Inc. The same guides in 193 or other AlSiMag materials may be ordered from American Lava Corp.

You are invited to check these facts! See for yourself how AlSiMag guides can improve your processing. Free test guides from our sample bins. Custom samples at reasonable cost.

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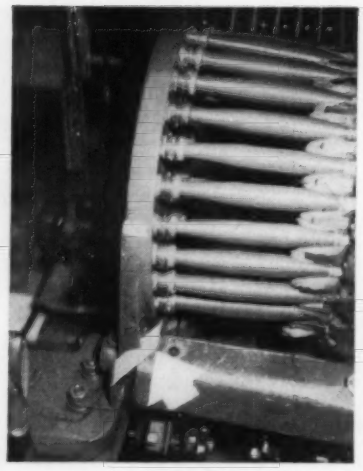


## Baffle on Loom Battery Keeps Filling Clean

On dope-dyed filling woven on Draper XD looms, our batteryhands used to fill the batteries all the way to the transferrer. And the last bobbin of filling was usually soiled by the transferrer. Since our woven fabrics are loom-finished, second-quality cloth was made.

To eliminate the soiled filling, we put a small baffle on the battery. The baffle is made from a piece of strap iron $\frac{1}{8}$ in. thick and 1 in. wide. A hole is drilled in one end of the baffle, and it is fastened to the front bolt that holds the hopper stand to the breast-beam.

A small V-notch is cut out of the iron, and the iron is bent over the transferrer-stud bearing surface in the hopper stand. Then the loose end of iron is twisted inside the hopper stand. The end of the iron is rounded off to form a smooth surface, and the flat surface is placed parallel to the hopper stand as shown in the picture (arrow).

We used the first sample of the baffle for a pattern, and our machine shop made enough of them for all our looms. They were bent to the exact shape and were put on the looms by removing and replacing only one nut.

Now batteryhands cannot overload the battery.

The baffle also helps prevent soiled filling a second way. When a strand of filling yarn breaks at the back of the battery at the thread guide, batteryhands reverse the battery to replug and tie up the broken yarn. They often pull the battery back too far, and the last bobbin plugged into the battery is bruised and soiled by the transferrer.

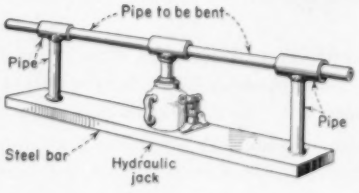
Now when the battery is reversed, the butt of the last bobbin in the battery strikes the baffle and no harm is done. This attachment has eliminated most of the soiled filling made at the loom. (K-2974) *W. H. Ballard Altoona, Pa.*

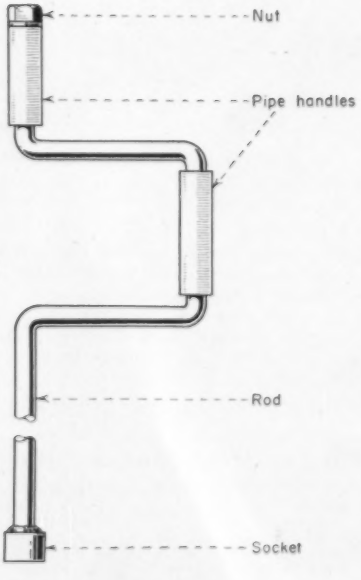
## Use Expansion Tank To Dissolve Naphthols

We eliminated the handling of large quantities of boiling dye solutions by doing the job right in the expansion tank of the package-dyeing machine.

The tank was modified by adding a perforated steam pipe to the bottom. Now, by closing the delivery valve at the bottom, we use the tank as a dye-dissolving drum. Care should be taken to see that the delivery valve stays closed during the dye-dissolving operation because vibration from the steam may cause it to open. One method of keeping the valve closed is to tie the valve handle down with a string.

The usual amount of water and caustic are added before the naphthol is introduced, and the whole is boiled up. If large amounts of the less-soluble naphthols are needed, this method saves handling several drums of boiling dye liquor and cuts down the labor required to make up the dye. (K-2944) *G. L. Somani, India*




## Save Time With Shop-Made Lag-Bolt Wrench

To fasten looms and other machines to the floor with lag bolts, we use a shop-made wrench. The wrench is made from a steel bar about 5 ft. long with two short pieces of pipe for handles.

The rod is bent, as shown in the sketch, after the handles are placed on it. The end of the rod is threaded for a nut to hold the top handle in place.

A socket wrench that will fit whatever size of lag bolts that is being used (usually $\frac{11}{16}$ in.) is welded to the bottom end of the rod. All burrs and sharp edges should be removed with a file and emery cloth. (K-2891) *C. S. Bicksler, Lancaster, Pa.*

## Here's a Handy Tool For Bending Pipe

A tool for bending or straightening pipe can be made easily in the shop. To a heavy steel bar, weld two arms; then weld a sleeve made of pipe or couplings to the arms. Weld another arm and coupling to a hydraulic jack.

The pipe to be bent is inserted in the couplings, and pressure is applied by the jack. Pipe can be either bent or straightened with this tool without flattening or distortion. (K-3022) *The Stabilizer*

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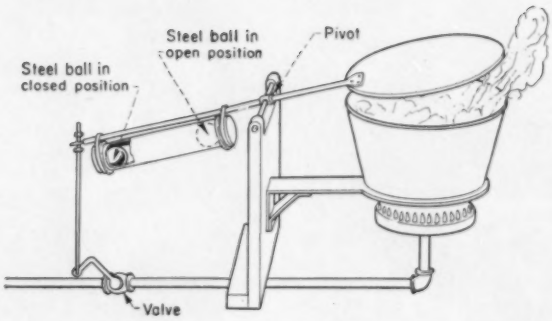
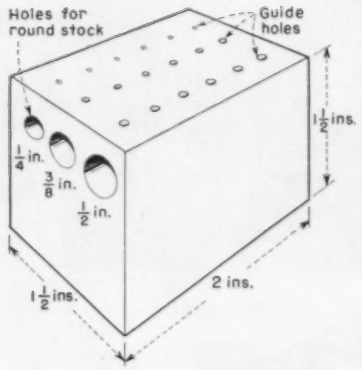



## Automatic Heat Shut-Off Reduces Fire Danger

Heating paraffin or chemical solutions on a gas ring requires close attention; fires may result if the solution boils over on the heat source.

To prevent danger from such fires, we rigged up an automatic shut-off connected to a closely fitting lid on the heating kettle. When enough vapor pressure develops to tilt the lid, a steel ball rolls down a piece of pipe to the linkage shown in the sketch; there, the weight of the ball shuts off the gas and raises the kettle lid.

The same type of control can be used for electrically heated kettles. (K-2982) *H. J. Haas, Martinsburg, W. Va.*



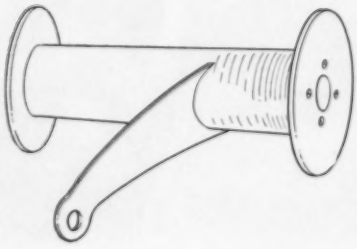

Drill guide for round stock

## Guide Aids in Drilling Round Stock

In our mill shop, we often found it difficult to drill properly aligned holes through round metal stock. The stock would tend to turn under pressure, the holes would get out of line, and sometimes the drill would break.

We solved this problem by constructing a guide from a piece of 1½x1½x2-in. steel drilled lengthwise with three ¼-, ⅜-, and ½-in. holes. Exactly over the center of these holes, we drilled a row of holes with the spacings most commonly used. The block of steel was then casehardened to keep the drill-guide holes from becoming distorted with use.

To use, thrust the round stock into the proper-size end hole and run the drill down through the guide hole. You may want to secure the end of the round stock in a vise, but if you are careful this precaution is not necessary because there is very little tendency for the round stock to turn and break the drill. (K-2935) *James Lavoie, Chelsea, Que.*



## Strip Bobbins With a Shoe Horn

Operators in our mill formerly cut waste from spools and bobbins with sharp knives that frequently scarred the wooden barrels. We stopped this damage by making a thread cutter or stripper from a large shoe horn.

The large end of the horn was ground to fit the curved contour of the bobbin's barrel, and the curved edge was sharpened. The operators simply slide the shoe horn along the barrel, and the threads come right off with a minimum of effort and damage.

If you have a number of different sizes of bobbins or spools to strip, it is advisable to shape several shoe horns to fit the various diameters of the barrels. (K-2988) *H. J. Haas, Martinsburg, W. Va.*

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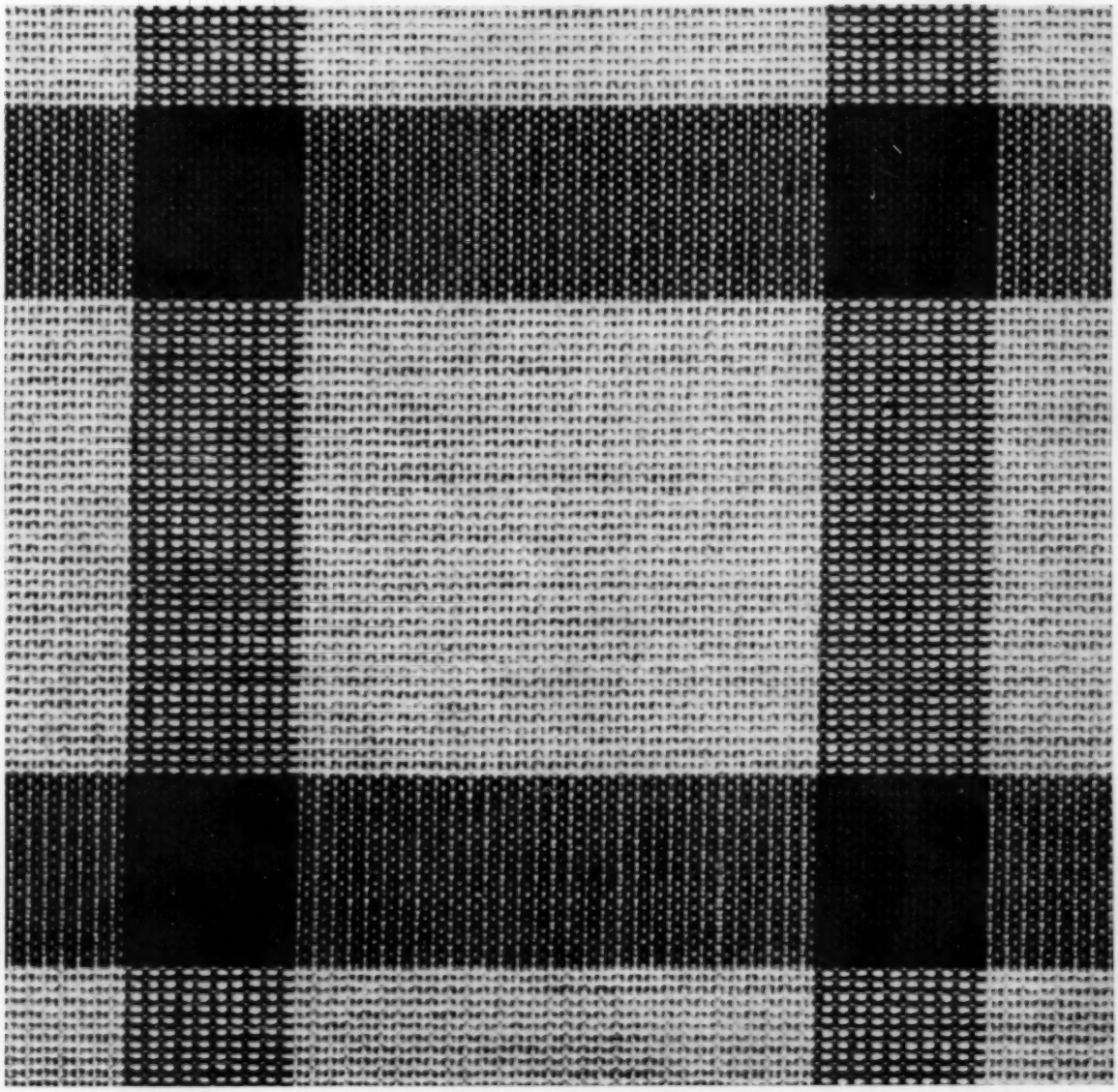
## We Use Plywood Strips For Loom-Reed Extensions

When a reed is too short for the lay, leaving several inches of open space between each end of the reed and the back box plates, serious trouble can result. The shuttle will have erratic flight and wear unevenly on the back side, which will lead to various sorts of operating troubles.

It is common practice to cut off strips of reeds of correct length to fill these vacant spaces. Reeds are expensive, and if the spliced pieces do not fit closely the trouble may be increased instead of relieved.

We use a piece of soft plywood to fill the open space between the reed and the back box. The plywood is cut to fit the opening, and one ply is removed except for a rib on each side. This plywood filler is the same shape and size as the reed and will not damage the shuttle. (K-3025) *Arthur Abbot, Berwick, Pa.*



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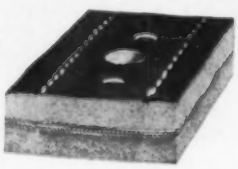

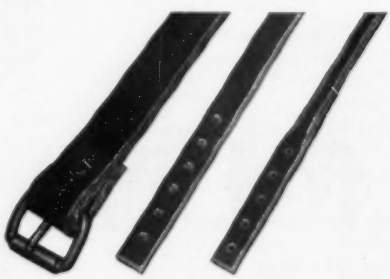

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# *Outstanding* NEW LITERATURE
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NO REPEATS . . . Listed here for July are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

### TEXTILE MACHINERY

**Fiber webber**—For producing random-distributed webs for nonwoven fabrics. Bulletin 104. Curlator Corp., Textile Div. (F-1)

**Compacting machine**—Dimensional stability in fabrics produced by a new principle. Riggs & Lombard. (F-2)

**Industrial dryers**—For textiles, coated fabrics, plastics. Bulletin 54. J. O. Ross Engineering Corp. (F-3)

**Air-drying slasher**—For cotton, rayon, synthetics slashing. Improved size box, air-movement control. Bulletin A.K.L. Saco-Lowell Shops. (F-4)

**Overedging sewing machines**—For binding, cording, welting, and other garment-manufacturing operations. Class 246 leaflet, 8 pages, from Singer Machine Co., Mfg. Trade Dept. (F-5)

**Conical rings**—For spinning frames. Increase package size, improve yarn evenness. Herr Mfg. Co. (F-6)

**Rib-knitting machine**—Produces 32 yds. per hr. Can be converted from plain to Swiss rib. Bulletin SK-101 Rev. Supreme Knitting Machine Co., Inc. (F-7)

**Striped-jersey machine**—For knitting bodies for polo shirts, underwear; 96 feeds; stripes to 3½ ins. wide on 26-in.-dia. model. Bulletin SK-104. Supreme Knitting Machine Co., Inc. (F-8)

**Pressure-dyeing machine**—For tufted carpets. Models for rugs from 54 ins. to 15 ft. Handles all types of fibers. Ten-Tex Corp. (F-9)

**Heavy-duty winder**—For coarse yarns, tire cord, woolen yarns. Produces cones up to 35 lbs. in weight. Bulletin A-98A. Foster Machine Co. (F-10)

### AUXILIARY EQUIPMENT

**Electric motors**—For textile and other drives in a.c., d.c., gearhead, open, and enclosed types. 1956 Bulletin. Century Electric Co. (F-11)

**Cloth guiders**—For finishing plants. Air-operated guiders described; operation and maintenance outlined in booklet form. Guider Specialty Co. (F-12)

**Textile rolls**—For spinning frames. Antifriction bearings with sealed lubrication; also top-roll assemblies, spring-weighted saddles. Cole Engineering Co. (F-13)

**Vacuum cleaning systems**—For spinning frames. Operate with all fibers, remove lint to collectors. Brochure 600. Spinsavac Corp. (F-14)

**Open yarn creels**—Designed to work with vacuum cleaning systems. Brochure 650. Spinsavac Corp. (F-15)

**Card drives**—Individual drives for cards that feature compactness. Lint-free motors, V-belt drive, with reversing control. Earnhardt Electric Service, Inc. (F-16)


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**Sight-testing equipment**—For industrial purposes. Machines and methods to check employee's visual capacity. Brochures A-1265 and A-1136. Bausch & Lomb Optical Co. **(F-17)**

**Air-conditioning equipment**—Dehumidifying equipment for offices, laboratories, testing departments. Bulletin 496. Abbeon Supply Co. **(F-18)**

**Spinning-frame cleaners**—Operate on vacuum principle, collect lint in containers at end of frame. Thoma Co. **(F-19)**

**Moisture-testing equipment** — For checking moisture content of textiles. Line includes dryers, scales, auxiliary items. Bulletin SL-1. Harry W. Dietert Co. **(F-20)**

## SUPPLIES & CHEMICALS

**Nonionic surfactants**—For textile and other industries, based on octylphenoxyethanol. Booklet from Rohm & Haas Co. **(F-21)**

**Nylon resins**—Dispersions of 61 nylon. Useful as bonding agents, finishes, coatings on all fibers. Bulletin 1. General Dispersions, Inc. **(F-22)**

**Common salt**—Rock salt treated to inhibit harmful effects of traces of contained calcium salts. Bulletin F-24. Morton Salt Co. **(F-23)**

**Vinyl foam**—For upholstery, packaging, gaskets, filters, many industrial purposes. Brochure from Elastomer Chemical Corp. **(F-24)**

**Polyester film**—For lamination with metal foils to produce yarns or sheets of decorative material. Bulletin MB-4. E. I. du Pont de Nemours & Co., Inc. **(F-25)**

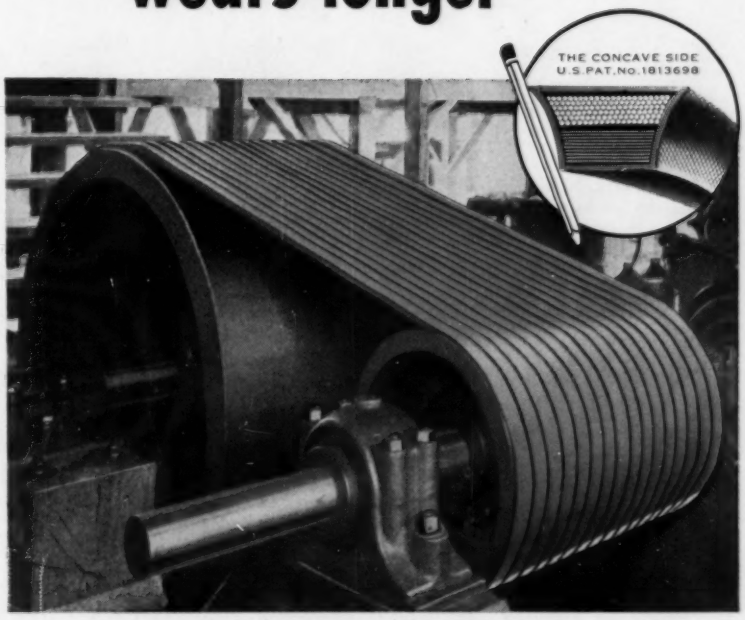
**Ultraviolet-light absorbers**—A series of products designed to protect coatings, lacquers, and films from the effects of ultraviolet light. Bulletin AP-42 Rev. General Aniline & Film Corp. **(F-26)**

**Ethers and oxides**—A comprehensive catalog (F-4764) describing these chemicals and their application, available from Carbide & Carbon Chemicals Co. **(F-27)**

**Surface-active agents**—How to select, what to expect from a series of anionic and nonionic surfactants. Bulletin F-5900D. Carbide & Carbon Chemicals Co. **(F-28)**

**Vinyl foams**—Produced in several pigment colors for a variety of purposes.


# Why a V-Belt with CONCAVE SIDES wears longer



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Make the same test with a straight-sided belt (Fig. 2) and see what happens. The sides bulge out on the bend (Fig. 2-A) concentrating the wear at points shown by arrows.

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# Gates VULCO ROPE Drives




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Idea booklet from Rubatex Div., Great American Industries, Inc. (F-29)

**Corrosion control**—Coatings for inside or outside use; walls, vessels, other equipment. Enterprise Paint Mfg. Co. (F-30)

## MAINTENANCE & ENGINEERING

**Heat exchangers**—Modular glass units, shell-and-tube type. Bulletin PE-33. Corning Glass Works. (F-31)

**Draft inducers**—For boiler plants. Packaged units complete with motor and drive. Bulletin 1-56. L. J. Wing Mfg. Co. (F-32)

**Chromium coating** — For machine parts, to increase wear, reduce corrosion. Bulletin from Chromalloy Corp. (F-33)

**Loom repair parts**—Catalog lists parts for Draper E, K, and Modified D looms. Draper Corp. (F-34)

**Stainless-steel pipe**—Pipe, fittings, recommended uses, and fabrication described in Bulletin TB-410 from Babcock & Wilcox. (F-35)

**Plastic pipe**—Fittings and pipe in two grades of polyvinyl chloride described in Bulletin TD-119 from Carpenter Steel Co., Alloy Tube Div. (F-36)

**Timing instruments**—Electrically operated units that indicate running time of machines. Cat. AC-587. John W. Hobbs Corp., Div. of Stewart-Warner Corp. (F-37)

**Air compressors**—Carbon-piston models and conventional types described in Bulletins HAC-40 and CRC-10. Gardner-Denver Co. (F-38)

**Hydraulic jacks**—Manual and power-driven hydraulic jacks and shaft pullers described in Bulletin Hydraulic 56. Templeton, Kenly & Co. (F-39)

**Water demineralization**—For power plants, process water. Technical Reprint T-140 covers all phases. Graves Water Conditioning Co. (F-40)

## GENERAL

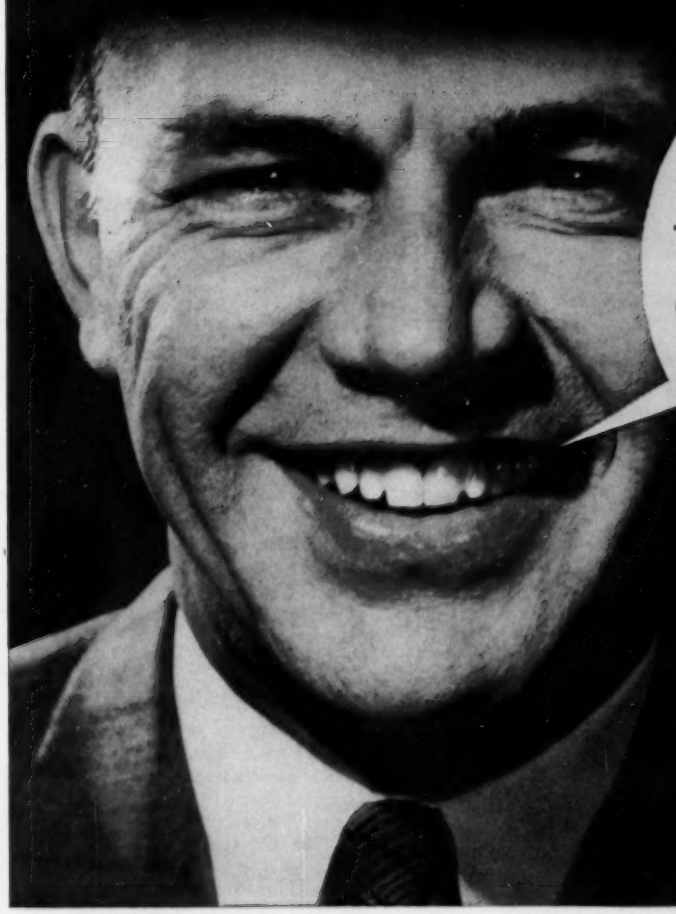
**Fork-lift trucks**—In capacities of 1,500 to 15,000 lbs. described in folder DMI-56. Towmotor Corp. (F-41)

**Intercom system**—In-plant telephone systems separate from outside lines. Case histories of ten plants in pamphlet from Automatic Electric Co. (F-42)

# Sodium **BICHROMATE**

# Sodium **CHROMATE**

# Potassium **BICHROMATE**



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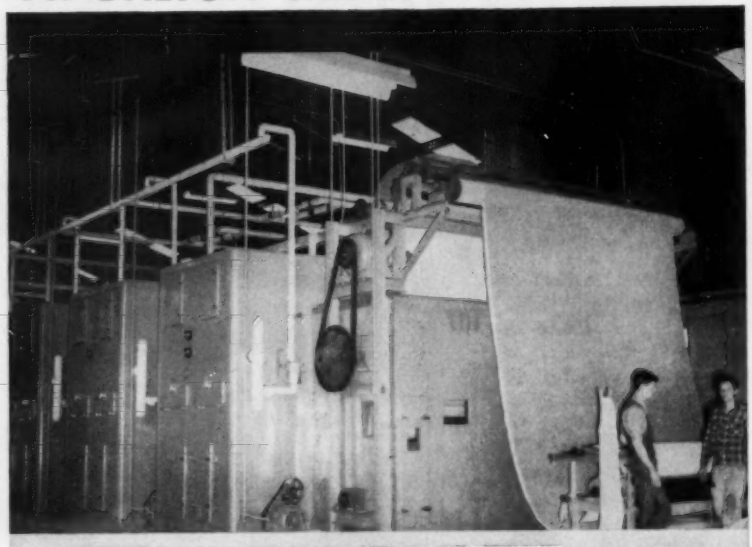
# ROSS Loop Dryer

## For DALTON CARPET FINISHING CO.



Three of the Five Circulating Zones at leaving end of ROSS Dryer. Note the D. C. drive and Roll-Up machine at right.

**Following the installation of their ROSS Latex Drying Oven, the Dalton Carpet Finishing Company, one of the largest serving the carpet industry, has now purchased their modern ROSS Loop Dryer.**

**This 60 ft. dryer handles 12 ft. Cotton, Rayon, Nylon and Wool Carpeting. Its widely spaced loops provide greater air circulation and, with its D.C. drive, maximum speed and tension control is maintained throughout the Range. Design features ROSS panel construction and provides access doors to interior mechanism. Full particulars on request.**

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Seattle


**Air-shipping tips**—How to ship safely and economically by air in corrugated boxes. Folder 6. Hinde & Dauch. (F-43)

**Steel shelving**—Boltless construction, open and closed types. Catalog 706. Frick-Gallagher Mfg. Co. (F-44)

**Packaging information**—What packaging does to promote sales of many products. Booklet from Folding Paper Box Assn. of America. (F-45)

**Industrial equipment**—For plants, offices. Steel shelving, trucks, ladders, fans, other items. Catalog from General Industrial Co. (F-46)

**How to hire office personnel**—Pointers on how to select personnel for office work; what to look for, how to judge the applicant. Folder from Martin Publishing Co. (F-47)

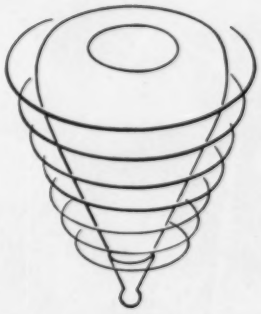
**Shipping stencils**—For marking cartons or boxes. Can be cut on standard office machines or by ball-point pens. Weber Marking Systems, Div. of Weber Addressing Machine Co., Inc. (F-48)

**Binders**—Ring binders, chart files, allied equipment for office and plant use. Circular 157A. Elbe File & Binder Co., Inc. (F-49)

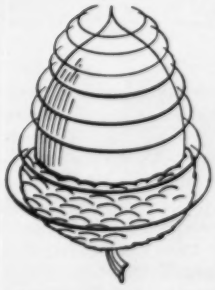
**Materials-handling equipment**—Trucks, bins, racks for textile products. Bennett Rose Co. (F-50)

**ASTM STANDARDS ON TEXTILE MATERIALS,** published by American Society for Testing Materials, 1716 Race St., Philadelphia 3, Pa.; 788 pages, $5.75.

The latest tentative and standard methods of test, specifications, and definitions pertaining to textiles are included in this book, which was prepared by ASTM Committee D-13 on Textile Materials. A partial list of contents includes specifications and test methods for: testing machines,



# TOP DRIVE or ACORN DRIVE?



# U S BOBBIN

## makes the BEST of both!

Personnel of U S Bobbin & Shuttle Co. have been very closely associated with the Top Drive principle in the bobbin art since its first introduction to American mills. In the manufacturing of these quills and warp bobbins we have developed a "know how" of which we are justly proud . . . and we offer the benefits of this valuable accumulated experience to any interested mill.

**A competent U S Field Engineer will contact you promptly, on request.**

**U S BOBBIN & SHUTTLE CO.**

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For information, contact either Sales Office; or our Technical Field Representatives located in Charlotte, Gastonia, Asheville, Nutley, N. J., North Attleboro, Mass. Supply Houses: Birmingham, Dallas, Los Angeles.



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The question most frequently asked by consumers when buying soft goods. "Will it fade?" is even ahead of "What is it made of?"—"How much does it cost?"—or "Who manufactures it?"

A nation wide survey made by the American Cyanamid Company of over 33,000 buyers and merchandise managers in department and specialty stores reveals this consumer attitude about color stability.

The seriousness of the problem of color failure is disclosed in the returns showing that color fading, running or rubbing off, brings merchandise returns to over 83% of the stores reporting. Among the worst areas are curtains, draperies and upholstery, say 38.64% of store respondents; dresses, 39%; blouses, skirts, sportswear, 31%; knitwear, 27.5%; slip covers, bedspreads, 27%; sport shirts, 23.6%; corduroy products, 20%; pajamas, 18%.

Atlas Fade-Ometers and Launder-Ometers permit accurate and dependable assessment of the degree of color fastness to light, washing and bleeding. Standard methods of test and of reporting results enable the manufacturer to provide guarantees which are recognized and understood by both buyer and seller.

Producers of soft goods who can advertise and sell their product as having a specific colorfastness rating have a price advantage over merchandise marketed without the color stability assurance provided by these Atlas Ometers.

Atlas Launder-Ometer

Atlas Fade-Ometer

**ATLAS ELECTRIC DEVICES CO.**
**4114 N. Ravenswood Ave., Chicago 13, Ill., U. S. A.**
*Sales representatives in principal cities throughout the world.*


humidity testing, identification, qualitative and quantitative analysis, resistance to pests and micro-organisms, fibers, yarns, fabrics, and woven, knitted, and nonwoven fabrics.

**WOMEN'S OPINIONS OF COTTON AND OTHER FIBERS IN SELECTED ITEMS OF CLOTHING,** by U. S. Dept. of Agriculture, Washington, D. C.; 118 pages, 60¢.

Marketing Research Report No. 112 deals with what the department has found to be preferred by women in the fiber content of many items of clothing.

In the ready-made or homemade classifications of outerwear such as summer dresses or blouses, cotton shows a gain in preference in recent years—up to 94% for ready-made house dresses. Wool leads in winter wear—33%—with rayon-acetate blends accounting for 24%. Between-season dresses of rayon-acetate blends were preferred by 27% of women, with cotton running at 17%.

The survey was conducted in May and June, 1954; and 2,281 women were interviewed by an area-probability method designed to give an accurate cross-sectional picture of the whole country.

Many tabulations are included in the report that give detailed information as to what fibers are preferred, why they are preferred, and how the fibers rate in the various categories of women's wear through the different seasons.

The report is excellent base material for textile manufacturers who want to keep abreast of customer preferences in fabrics.

**CUTANEOUS TOXICITY EVALUATION OF FABRICS IMPREGNATED WITH ANTIMILDEW AGENTS,** by M. V. Shelanski and Charles Josephs, Industrial Toxicology Laboratory, Wright Air Development Center, U. S. Air Force; (Order PB111800 from OTS, U. S. Dept. of Commerce, Washington 25, D. C.) 22 pages, 75¢.

The effect on human skin of a series of organic compounds used to inhibit mildew on fabrics was studied by the prophetic patch-test method. Halogen-substituted dinitrobenzenes elicited many strong reactions as evidence of primary irritation on human subjects. Such compounds were not recommended for use on any material that would come in contact with human skin.

# INSTALL WIREWAYS FASTER!

## SQUARE D's NEW AND EXCLUSIVE *Lay-in Duct*

FASTER ASSEMBLY!
LESS NUTS AND BOLTS
FASTER WIRING!
NO MORE THREADING OR PULLING OF CONDUCTORS...JUST LAY THEM IN
FASTER HANGING!
UNIVERSAL TYPE HANGERS
FASTER GANGING!
KNOCKOUTS MATCH THOSE ON RELATED SQUARE D EQUIPMENT. NO CONDUIT BENDING

Square D's exclusive design provides hinged covers for both the duct sections and connectors. Easily removable fitting covers then provide a completely unobstructed wireway in which to lay wires.

**LAY-IN DUCT** is available in 2½" x 2½", 4" x 4", and 6" x 6" sizes, in standard lengths of 1, 2, and 5 feet. There is a complete line of fittings, all with the "lay-in" design feature.

• • •

*Write* for the complete story of **LAY-IN DUCT**—how it gives you a better wireway system, easier, faster and at less cost. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

**NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE!**

**SQUARE D COMPANY**

SAFETY in NUMBERS

34

STANLEY Magic Door CONTROLS

prevent product damage at AVONDALE MILLS by equalizing drafts and pressures

Drafts or pressure conditions created by doors that remain open too long cause product damage, upsetting specified temperature and humidity requirements.
But *not* at the various Avondale Mills where *34 Stanley Magic Door Controls* open doors on approach, keep them open the minimum of time required to let traffic through, then close them automatically. Above, is a Stanley Magic Eye* Control in operation at the Avondale Mills' plant, Sylacauga, Alabama.

Your mill, too, will benefit through the installation of Stanley Magic Door Controls to operate swinging, sliding or folding doors:

- *To control temperature and humidity.*
- *Save time by speeding up traffic flow*
- *Eliminate maintenance costs due to damaged doors*
- *Improve working conditions*

**MAGIC EYE** (photoelectric)
Actuates door when beam is broken.

**PULL CORD**
Door is operated only with pull of overhead hand cord.

**PUSH PLATES**
Wall-mounted push or kick plates. Adaptable to many industrial locations.

*Write for free literature and to arrange a visit from the Stanley Representative.*

**MAGIC DOOR DIVISION, THE STANLEY WORKS**
DEPT G, 1132 LAKE ST., NEW BRITAIN, CONN.
*Representatives in Principal Cities*
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STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

## YARN COSTS CUT

CONTINUED FROM PAGE 87

used to clean the waste water, after which it is recirculated through the humidifying system.

Adjustable-sheave American Pulley drives were installed on the frames to assure constant front-roll speeds. Superintendent J. Harlan Blankenship says the front-roll speeds stay well within ¼ rpm.

### Humidity and Heat Control

The Pneumafil materials-recovery system, in addition to performing normal cleaning functions, pulls heat out of the spinning room during hot days and helps maintain humidity at 50 to 52%.

The mill estimates that the system, on occasions, lowers the room temperature as much as 10° F. Russell does not have refrigerated air conditioning; so the management feels that this feature is very important.

Waste stock from ends down is returned directly to the pickers without handling. Ducts convey the stock through a materials-handling fan to a No. 5 waste feeder that supplies a No. 2 reserve box through a No. 11 condenser. The stock, thoroughly fluffed and blended, enters the reserve box at the rate of 5 to 10 lbs. per hr. So far, no thread yarn or short pieces of roving have been observed in the waste returned to the picker room.

Part of Russell's 5¢ per pound saving in yarn manufacture is made in the winding department, where the large spinning packages permit one operator to run 120 spindles, compared with 40 spindles previously handled.

## ALABAMA T.O.E. SLASHING

CONTINUED FROM PAGE 89

228 oz. per min. We run heavy sets, 5,800 ends of 14½s yarn, about 30 yds. per min. Our slasher will run 70 yds. per min."

**Mill D**—"Our drives increased slasher efficiency and improved quality. We paid for the drives in savings from warp handling, tying in at the loom, loom cleaning at warp-outs, and reduced thread waste. We increased slasher speed approximately 20%; we now run 60 yds. per min. on double heads and 80 yds. per min. on single heads."

**Mill E**—"We have a multimotor drive on a 120-in. slasher. We put more yardage on loom beams and have less doffing, and every warp has the same tension. Our slasher runs at 54 yds. per min.

"There are fewer warp-outs at the

# BUILT TO LAST!

## Spaulding VULCANIZED FIBRE TRUCKS FOR TEXTILE MATERIALS HANDLING

Preferred throughout the Textile Industry, Spaulding Vulcanized Fibre Trucks are famous for dependable service and long range economy.
Spaulding Vulcanized Fibre Trucks are made in a wide variety of standard styles and sizes, as well as to specifications to fit your needs.
These are the factors behind this envied reputation.

Spaulding also fabricates these items for the Textile Industry: Barrels, Boxes, Baskets, Cans, Bobbins, Headless Package Rolls, Take-Up Tubes, Sizing Tubes, Lap Rolls, Pirn Caps and Redraw Caps.
Contact the Spaulding Sales Office nearest you for complete information.

**BEST BASIC MATERIAL:** Tough, lightweight Spaulding Vulcanized Fibre. Won't splinter, snag, rust or corrode. Highly resistant to impact, abrasion, oils and greases.

**SUPERIOR CONSTRUCTION:** Steel reinforced with smooth rolled top band to eliminate snagging corners. All surfaces are extra smooth. Roller bearing fixed and swivel wheels with thread guards.

**HIGH EFFICIENCY:** Easy to handle and move about. Can be shipped fully loaded without damage. Low maintenance and repair costs. Less product damage.

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**CLEVELAND 16, OHIO**
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4612 Woodward Ave.
**FORT WAYNE 6, IND.**
2301 Fairfield Ave.
**LANSING 10, MICH.**
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**WESTFIELD, N. J. (Newark Area)**
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P. O. Box 92

**SPAULDING FIBRE COMPANY, INC., TONAWANDA, NEW YORK**


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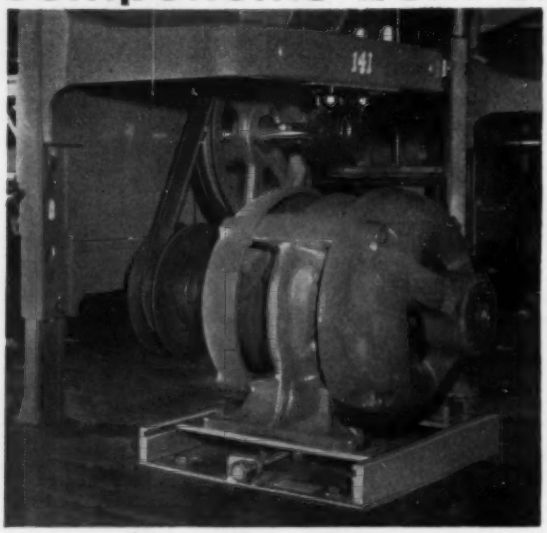
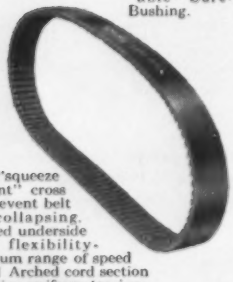
# now
## all components from stock



## for Wood's complete spinning frame drive

Accurately machined and balanced companion sheave is equipped with demountable "Sure-Grip" Bushing.



Rigid "squeeze resistant" cross ribs prevent belt from collapsing. Notched underside gives flexibility-maximum range of speed control Arched cord section maintains uniform tension.

Quick-slide motor base features provision for releasing the adjusting screw, permitting the motor to be moved quickly and freely.

Whether you are planning new drives or change over from old existing spinning frame drives, Wood's has just the right HP, and speed range ratio you need. Select from 1 to 5HP and 2 to 1 speed range or 5 to 20HP with 3 to 1 speed range. In addition, all component parts, such as the companion sheave, notched belt and quick slide motor base, can now be readily obtained from our stock. No cause to concern yourself with delays in production hold-up and delivery time from source of supply.

Just phone or write your nearest Wood's Distributor, tell him what you need and want in a variable speed drive and leave the rest to him. For a more informative story on our line of variable speed drives for the Spin-Weave Industry, write for bulletin #497, today.

**T. B. WOOD'S SONS CO.** CHAMBERSBURG, PA.

CAMBRIDGE, MASS. • NEWARK, N. J. • DALLAS, TEXAS • CLEVELAND, O.

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loom. The tension on the warps at the looms has to be adjusted less often, and there's less waste yarn."

**Mill F**—"Slashers with multimotor drives run faster than slashers with friction drives. We run our slasher 90 yds. per min. Warps are more uniform. Slasher cost is lower, and weaving efficiency is increased."

**Mill G**—"Slasher speeds are increased with multimotor drives. Our constant operating speed is about 60 yds. per min. Tension control decreases the number of ends down; smooth starts and stops decrease the number of end breaks.

"Multimotor drives pay for themselves with increased weaving efficiency and lower slashing cost."

---

### TOP LOOM PERFORMANCE

CONTINUED FROM PAGE 95

Trial-and-error methods must be used in adjusting any of the loom parts because a setting that will work on one loom will not work on another because of differences in power.

To set the lug at the correct height on the picker stick and keep it there requires a lot of hard work and sometimes a considerable outlay of money for the parts necessary to bring the picking motion up to par. Once the lugs are raised, a return on the investment will begin to show in increased production, decreased costs, and better quality. It is easier and costs less to maintain machinery at a high level of efficiency than to repair or rebuild machines that are run-down.

Standard settings should be worked out for all vital parts of the picking motions. The loomfixers should be trained in these settings and a method of follow-up used to see that standards are maintained.

Looms of different makes, models, and sizes or with different accessories require different settings. The first thing, then, is to get the right settings for each particular lot of looms. These settings can be obtained from the manufacturer, and some slight changes may be dictated because of local conditions.

When the settings are agreed upon, gauges should be made for all the loomfixers, overhaulers, and second hands. A pick and lay gauge can be easily made from small flat iron stock or from discarded metal lease bars.

#### Start Must Be Made

When all the loomfixers have received gauges and are trained in their use, it should be mandatory for them to keep all parts set to gauge tolerances. A loom is such a complex ma-

# Mount Hope Cloth Handling SYSTEM

## Saves up to $28,000.00 per machine per shift, per year in a printing plant

EXPANDERS

CONTINUOUS ROLL FEEDS

EXPANSION GUIDES

GUIDERS

CLOTH OPENERS

SLACK SELVAGE ELIMINATORS

SKEWED WEFT STRAIGHTENERS

BOWED WEFT STRAIGHTENERS

ADJUSTABLE TENSION SQUEEZERS

OVERHEAD SHEAVES

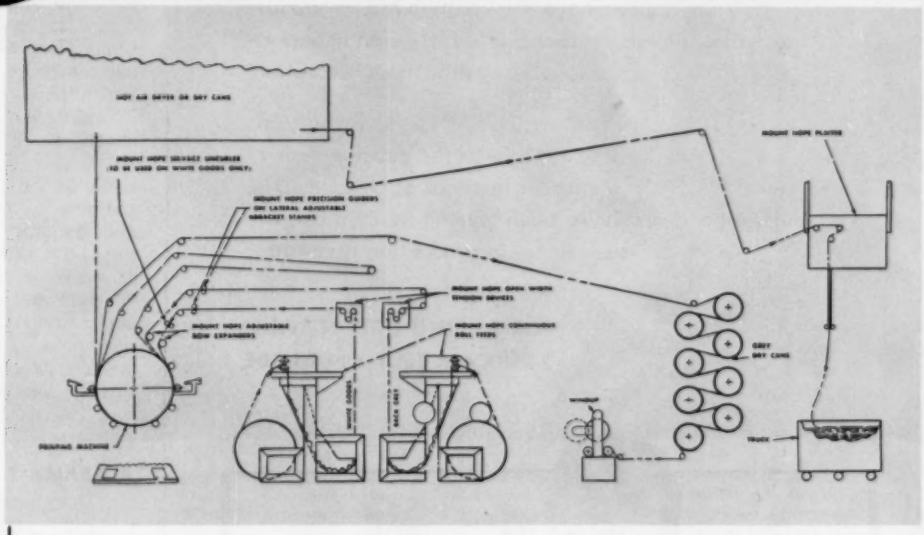
DETWISTER TURNTABLES

DETWISTER SWITCHES

PLAITERS

DRAW ROLLS

POTEYES



### OTHER APPLICATIONS

The diagram herewith shows typical applications of the System in a printing plant. However, the System is also used in tentering, coating, loop-drying, continuous open width bleaching and singeing operations, complete cloth-room system, and throughout every cloth processing stage — from loom to finished material.

### WHAT IT DOES

It automatically feeds and guides cloth, and does it better, more economically, more accurately and dependably than by any other method. Naturally it saves large amounts of money in so doing — as much as $28,000 per machine per shift per year in a typical printing plant — somewhat less in a finishing plant. BUT it will not effect maximum savings unless the COMPLETE system (all the units which are required in that particular case) is utilized.

### WHAT YOU NEED

Deciding what is needed for a truly efficient cloth handling system is no job for the inexperienced. Ask our engineers to survey your plant and make recommendations.

### SEND FOR WRITE UP

Want more information before you take action? Then send for our write up on "The Mount Hope Cloth Handling System", which describes in detail the System's many applications and how it can save money and improve quality.

**MOUNT HOPE MACHINERY COMPANY**

*Originators of Modern Expanders*
*Leaders in Cloth Handling Equipment*
*151 Fifth St., Taunton, Mass.*

*Southern Repair Shop,* Charlotte, N. C.



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Globe DYE WORKS CO

# Orlon yarns dyed by GLOBE

Sweaters knit from butter-soft, lofty Orlon yarns, dyed by Globe, have the cashmere-like quality that delights the heart of style-and-comfort-conscious women without exception.

This is not surprising for Globe technicians had a leading role in the development of present methods of Orlon dyeing, and Globe dyers have been dyeing it continuously ever since, in production quantities.

**FOR DYEING ORLON YARN YOU CAN RELY ON GLOBE**

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

**4500 Worth Street, Philadelphia 24, Pa., JEfferson 5-3301**

chine and has such a variety of movements and motions that some slight variation of settings is necessary from loom to loom. However, this variation will be slight, and in most cases it will be found that exact gauge settings can be made and maintained with a minimum of labor and repair parts.

The lay and pick gauge is used to set the lug at the correct height on the picker stick, to set the power arm, to check the stroke or throw of the picker stick, and to time the pick cam. The various settings are shown and described in the accompanying illustrations.

Once all the looms are set up by gauge, the loomfixers will not want to go back to the old rule-of-thumb methods. Some of them may not like the idea of gauges when first used; and building the looms up to par may be a slow, discouraging process. However, a start must be made if the lugs are low because present-day competition will not permit inefficient operations. Lugs low on the picker sticks spell out low production, low quality, low profits, and low morale.

---

## ALABAMA T.O.E. WEAVING

CONTINUED FROM PAGE 107

are notified so that the loom can be checked immediately."

### Keep Looms Fixed

**Mill B**—"We control cloth quality by keeping looms in good mechanical condition. Loomfixers, smash hands, and shift foremen check each loom every shift. The cloth room also makes a seconds report for each loom daily.

"When a warp is out, the loom is cleaned and oiled. Then a warp-out tag is put on the loom. The loomfixer checks the loom thoroughly. After a new warp is tied on, the smash hand corrects all misdraws in the cloth and flags the loom for the loomfixer.

"The loomfixer rechecks the loom with the warp-out tag and starts the loom. He gives the warp-out tag to the head loomfixer, who rechecks the loom during the same shift.

"To follow up looms making seconds, the cloth room sends a report to the weave room on each roll of seconds; the report lists the loom number, cloth style, and defect. The weaver and loomfixer check the loom. Then the head loomfixer checks the loom. The weave-room overseer also receives a copy of the report, and he checks the loom.

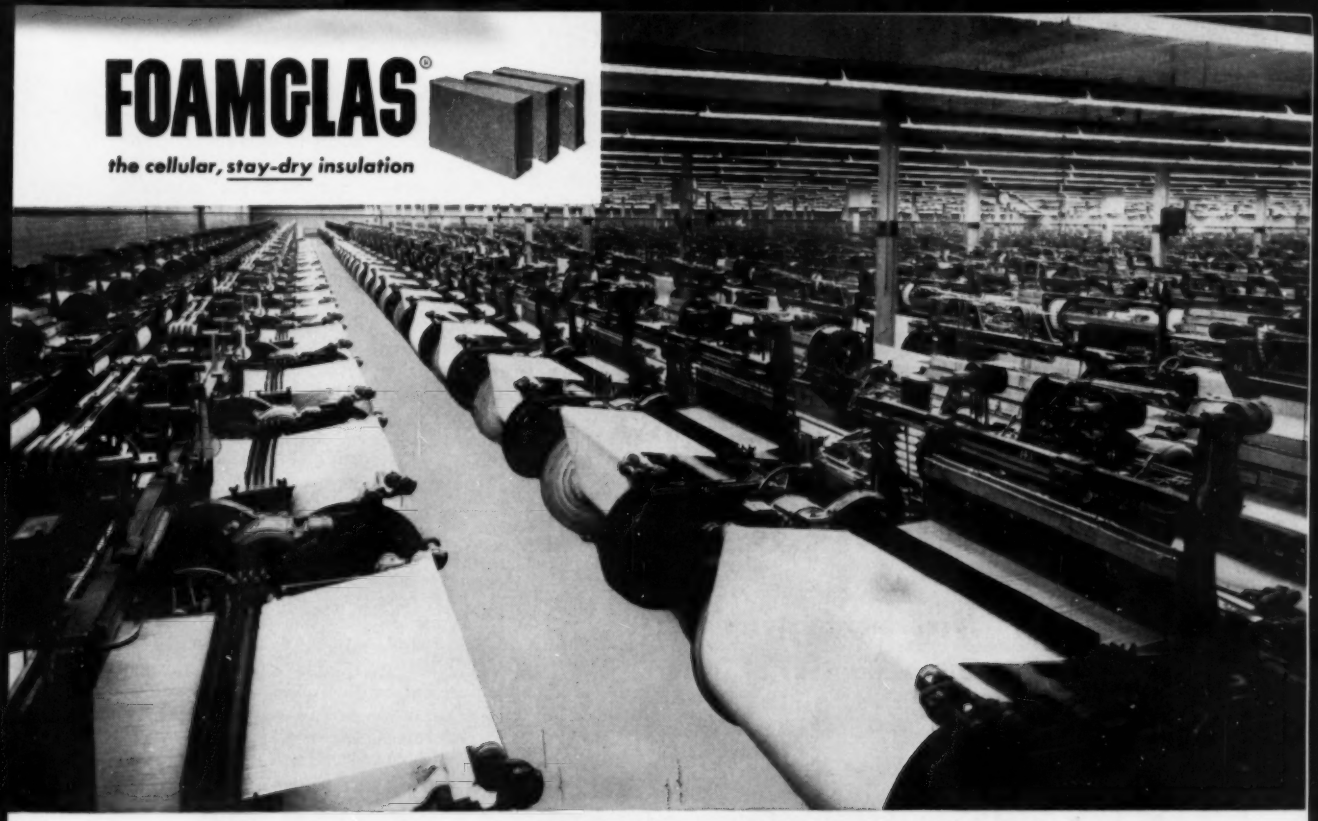
### Everyone Inspects Cloth

"A daily report is made of all looms making several yards of seconds, and

# FOAMGLAS®



*the cellular, stay-dry insulation*



Now celebrating their 60th anniversary as a maker of top-quality print cloths, twills and broadcloths . . . Clinton Mills' broad textile manufacturing experience led them to rely on stay-dry FOAMGLAS to furnish dependable insulating protection for this 1300-loom weave room.

J. B. Templeton, Production Vice President, Clinton Cotton Mills, Clinton, S.C., reports . . .

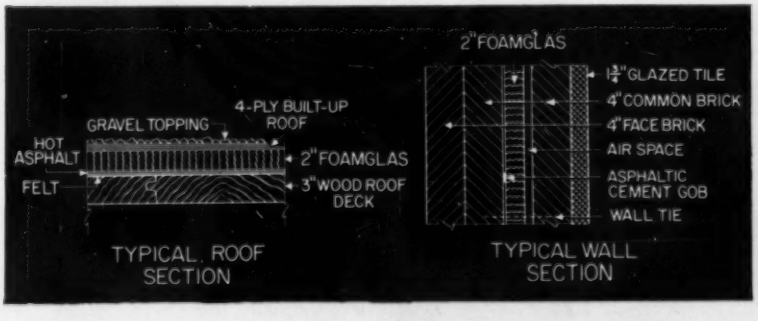
## "FOAMGLAS roof and wall insulation stays dry, helps stabilize temperature-humidity to lower operating costs in this weave room"

When warp and filling yarns dry out and break, textile looms shut down. That cuts loom efficiency and boosts operating costs. The answer is constant, accurate temperature-humidity control to keep yarns workable. For such control, dependable insulation is a must!

"We picked FOAMGLAS to insulate roof and walls of the new 1300-loom weave room added to our Clinton, S.C., mill last year," says J. B. Templeton, Production Vice President of Clinton Cotton Mills. With its structure of closed glass cells, FOAMGLAS can't absorb moisture and lose efficiency as other insulations do. It stays dry and effective.

Mr. Templeton concludes: "FOAMGLAS aids in maintaining dependable temperature-humidity control. Yarn fibers stay moist, workable and free from static electricity. Condensation on weave room walls and ceiling is eliminated. Our looms operate at or near rated capacity with minimum shutdowns."

*You'll* profit, too, when you insulate roofs, ceilings, walls, piping or equipment with *stay-dry* FOAMGLAS. It's completely inorganic—therefore rot-proof, fire-proof and acid-proof. It's strong, rigid and dimensionally stable, too. Prove it! Send today for a free sample and directions for six simple tests—easily performed in your own office. Prove to yourself that FOAMGLAS is *your* ideal insulation! Write—



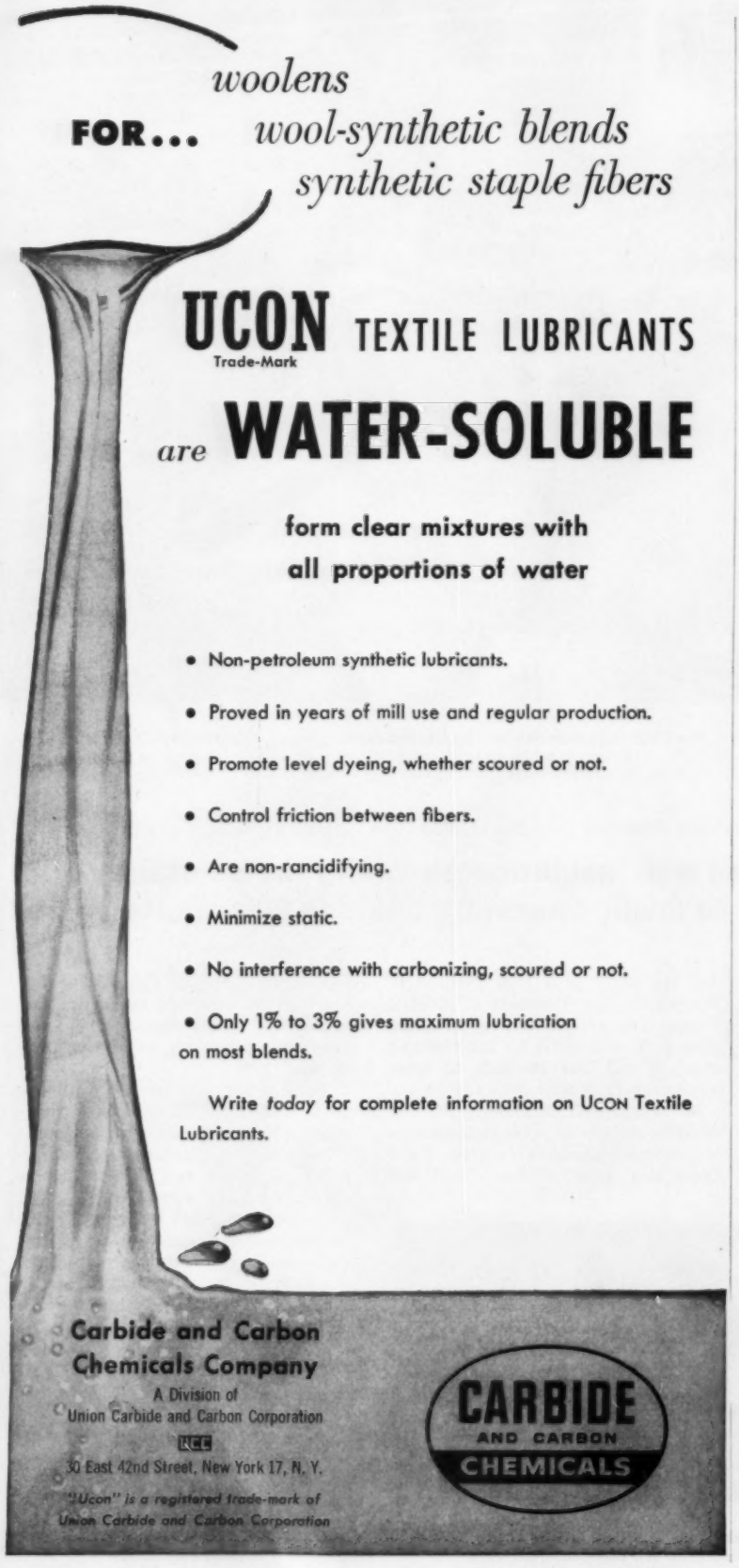

Drawings show application of FOAMGLAS on roof and walls of Clinton Mills' new weave room. Since the insulation prevents condensation, there is no danger of moisture damage to walls, roof, window frames or floors.

**Pittsburgh Corning Corporation**

Dept. AH-76, One Gateway Center
Pittsburgh 22, Pennsylvania

In Canada: 57 Bloor St. W., Toronto, Ontario

® also manufacturers of PC Glass Blocks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UCON TEXTILE LUBRICANTS
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are WATER-SOLUBLE
form clear mixtures with
all proportions of water
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• Only 1% to 3% gives maximum lubrication on most blends.
Write today for complete information on UCON Textile Lubricants.
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AND CARBON
CHEMICALS


this list is given to loomfixers so that they can recheck the looms. All major defects are shown to weavers or loomfixers. Seconds are separated by shifts. Our seconds run about 2.5%."

Mill C—"Everyone in our weave room inspects cloth—weavers, smash hands, loomfixers, quality-control men, and second hands. At the beginning of each shift, smash hands inspect the cloth on each loom with flashlights. If a loom is making seconds, they record the loom number and defects on a card, which they give to the second hand.

"Loomfixers check key mechanical points of each loom as they inspect the cloth at the beginning of each shift. They correct all defects found before they start working on any flagged looms.

"A quality-control man on each shift inspects in detail as many looms as possible. He makes a report of trouble found and gives it to the overseer. The quality-control man's main job is to follow up on second-quality cloth reported by cloth-room inspectors; he also keeps a file of all reports."

---

## PIECE RATES

CONTINUED FROM PAGE 112

rate setting, without regard for work methods, is usually about 10% high.

Payment of a flat differential on all piece rates of, say, 8% more for Orlon than wool is a common situation. The new fiber may be easier to work than the old as far as some jobs are concerned. For others the job may be harder, and for most it may be the same. The result of a flat allowance on all piece rates is that some people gain, others lose a little, and the company loses a lot.

The determination of a fair-earnings level for each job group starts with a consideration of the area wages, which are best thought of in terms of time work rather than piece-rate earnings. If you pay less than the area wages, you will get only poor-quality help.

Most plants pay about the average for the area for equal conditions of employment. Another factor is the minimum wage that applies in your plant and the ladder of wages that scales upward from this minimum according to job skills.

### Offer 25% Above Rate

Then there are your plant's fringe benefits, steadiness of work, and the important matter of traditional earnings that affect the planning of wage levels. Finally, there is the spread that you must pay to get people to work at an incentive pace rather than at a

**Material:** Activator solution—water with 5% ferro-sulphate.

**Problem:** Short service life of turbine pumps; sometimes only two weeks.

**Solution:** First Moyno ran 6 months without a breakdown. Using relief valves, pressure is kept at constant 120 p.s.i. Now using 7 Moynos because of this exceptional service.

**Material:** Anti-scale boiler treatment. (Alcohols, oils, anti-foam agents, sludge conditioners.)

**Problem:** Frequent pump breakdowns caused by back pressure of spray nozzles; and abrasion.

**Solution:** Moyno pumps cut pumping time from 20 minutes to 3, reduced down-time, increased production 200%!

**Material:** Caustic solution—for use in mercerizing machines.

**Problem:** Rotary pumps wore quickly; lost capacity, and did not have enough suction.

**Solution:** Moyno pumps cut maintenance and repairs to minimum—had ample suction for drawing caustic through the cloth.

**Material:** 40° copperas crystals in 20% sulphuric acid.

**Problem:** Low production of diaphragm pump.

**Solution:** Moyno pump handles an increased percentage of solids, which in turn increases production.

**Material:** Calcium carbonate slurry.

**Problem:** Continuous failures of centrifugal pumps.

**Solution:** Moyno pump still giving perfect service after 1½ years. Service is practically continuous—with pump in operation 24 hours per day.

**Material:** Size—containing china clay and latex.

**Problem:** Centrifugals unable to handle viscosity—causing frequent trouble.

**Solution:** Moyno pump has been on duty for a year. Pump trouble completely eliminated; no repairs required.

# Six Chemicals-Handling Problems... Solved by the MOYNO® PUMP!

## *Features of the MOYNO that may solve YOUR pumping problem*

**Positive Displacement**—Moynos are available to pull up to 29" vacuum while discharging under pressure. Big Moynos deliver up to 250 g.p.m. at pressures to 600 p.s.i.

**Gentle**—No churning; won't break up semi-solids; won't aerate liquids.

**Reversible**—The Moyno pumps with equal efficiency in either direction.

**Versatile**—handles liquids, abrasive slurries, pastes—even potato salad! Rotor and stator are available in stainless steel, other alloys or plastics to meet a wide variety of applications.

**Trouble-Free**—self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain.

Looking for a pump with a fast-growing reputation for solving tough pumping problems? Then take a look at the simple, versatile Moyno!

Briefly described above are a few of the many successful case histories proving how Moynos handle jobs where other pumps fail. Why is the Moyno a "problem-solving" pump? For one thing, because it differs completely from conventional pumps . . . rotary, centrifugal or piston. Just one rugged moving part—a rotor turning within a stator—does the job.

The list of chemicals handled by Moynos gets longer every day. If *you* have a pumping problem, such as handling abrasive slurries, mild acids, caustics—watery, viscous or even semi-solid—find out if the Moyno can help you! Use the coupon below for prompt, complete information.

**ROBBINS & MYERS • INC.**

SPRINGFIELD 99, OHIO • BRANTFORD, ONTARIO

Fractional & Integral h.p. Motors & Generators | Electric Fans | Electric & Hand Hoists & Cranes | Moyno Pumps | Propellair Industrial Ventilating Equipment

**Robbins & Myers, Inc.** TW
**Pump Division, Springfield 99, Ohio**

Gentlemen: Please mail free copy of Bulletin 30-B containing details on construction and operation of Moyno Pumps:

*Name*_____ *Title*_____

*Company*_____

*Address*_____

*City*_____ *State*_____



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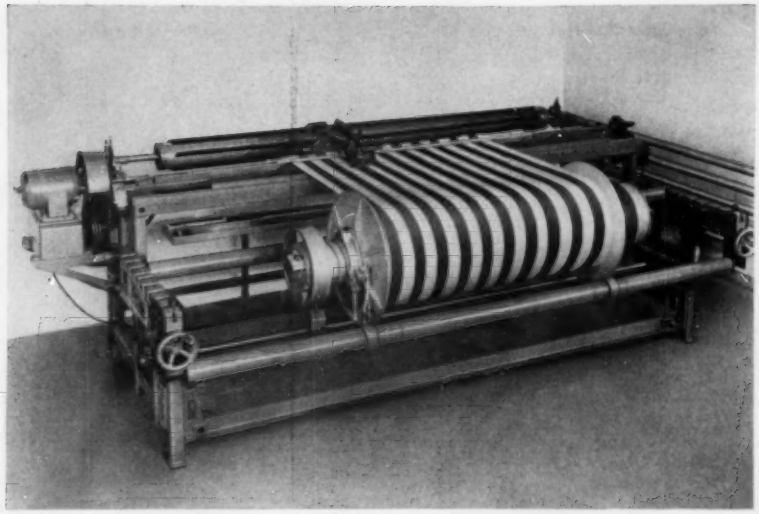

# EVERY COST CUT ADDS PROFIT!

## USTER WARP LEASING MACHINE CUTS LOOM STOPPAGE

**The Uster Warp Leasing Machine is indispensable for single color, slasher dyed or simple striped warps. Handles cotton, worsted, rayon and nylon with heavy sley. No crossed ends with the Uster Warp Leasing Machine which means significantly fewer thread breaks, less loom stoppage and increased fabric quality.**

## USTER WARP LEASING MACHINE CUTS SLASHER DOWN TIME WITH NO LOSS ON SLASHER DYED WARPS

**Only 3 to 5 minutes slasher down-time versus Scotch Hook-Reed leasing of 20 to 30 minutes down and savings on slasher dyed warps of 40 to 60 yards.**

## USTER WARP LEASING MACHINE CUTS COST PER THOUSAND ENDS

**Cost per thousand ends is cut as much as two thirds over hand leasing in a 1:1 lease. Lower rates per thousand ends for hand drawing-in. Full spectrum striped warps are now possible for many mill operations using multiple end stripes. Uster engineering advice relative to striped warps is as available as your phone, telegraph or company letterhead!**

**IT WILL PAY YOU TO CONTACT USTER FOR FREE CONSULTANT ENGINEERING SERVICE**

**USTER**

**USTER CORPORATION**
**CHARLOTTE 8, N. C.**

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**LOOK TO USTER FOR TEXTILE PRODUCTION SAVINGS**

CONTINUOUS QUALITY CONTROL IN MANUFACTURING

slower time-work pace.

What this spread means is that you must offer your average piece worker, who exerts average piece-work effort, at least 20% and propably 25% above the time-work rate that might apply for that type of work. If you have a $1.00 minimum wage at your plant, your average piece worker must find $1.20 or $1.25 as reasonable potential in her work if she produces at a fair pace. Otherwise, she will probably idle along for $1.00 per hour at a costly make-up. Higher minimum wages, of course, boost the yield point you need to obtain piece-work effort.

The determination of a fair production per hour in some plants takes the form of the timing of a bundle of work. In other plants a sneak wrist-watch or in-the-pocket stopwatch study is made. The first method is almost always wrong because it does not allow for the variable delays involved in thread breakages and other interruptions and for the pace of the worker.

The last method depresses morale. Despite your ability to hide the watch, your operators know well enough when you are clocking them. The readings are poor because they are statistically inaccurate. You simply don't get enough readings in a hidden study to properly measure the job.

Elemental timestudy, supported by a cross index of the time values called standard data, can accurately measure the production of a job.

The time-study man uses a decimal-minute stopwatch with the operator's cooperation. He measures each small part of the job, such as the time to pick up parts, sew, and reposition. He averages the readings, adjusts for the pace of the person being studied, and adds a standard allowance for such things as self-service, normal delays, and an amount for relaxation.

### Make 20% Allowance

About 20% of the total time, or about 96 mins. for an 8-hr. day, is a common allowance. The results of the timestudies are checked against other data from previous studies so that consistency is maintained. The outcome is an accurate measure of the production per hour that you can reasonably expect for average incentive effort.

This timestudy procedure is not complicated. In many places, girls on moderate salary take the studies, while plant managers and other technicians analyze the studies. The technique of timestudy is accepted by business and labor.

The final step after we have de-

# **NEW** way to improve upholstery backings with **RHOPLEX** acrylic emulsions

Boys will be boys . . . and since you can do little to change them, consider "boy-proofing" your upholstery backings.

New RHOPLEX thermoplastic acrylic resin emulsions give you a new set of answers for your upholstery backing problems. By combining RHOPLEX resins in varying proportions you may obtain any degree of softness or firmness you desire. Yet, unlike rubber, a RHOPLEX film will not discolor or stiffen with age or exposure to light under ordinary conditions.

RHOPLEX films adhere with a vise-like grip to textile fabrics, require no curing, have no odor at all when properly processed. Try this new way to increase the preference for your upholstery materials.

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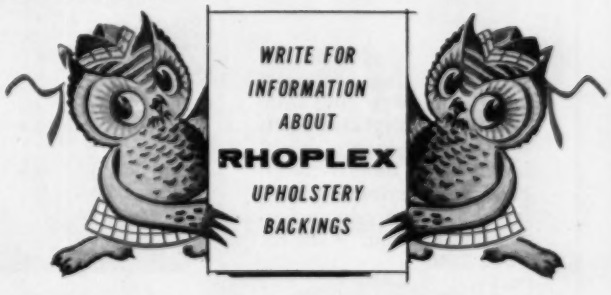


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Capacities from 5,000 to 2,000,000 gallons—and covering designs ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower. Send us your inquiry, stating capacity, height to bottom and location. Write for *Tank Talks*.

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

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termined what is a fair wage and what is a fair production is to merely divide the two. The result is the piece rate that applies to the job under the conditions in use when we took our studies.

This piece rate has no direct relationship with any other piece rate. Productions per hour are often related, but piece rates cannot be compared from one job to another or from one plant to another unless the expected earnings levels are understood.

---

### SPINNING TECHNIQUES

CONTINUED FROM PAGE 101

The majority of the reports were favorable.

Mill A reported that roll picking was reduced 50%. Mill M was disappointed in the life span of the rolls but was pleased with the reduced cleaning, oiling, and picking. Mill N, after four years of experience, said that the rolls do not improve evenness and breaking strength but do produce a better-quality yarn because of less oiling and cleaning.

Most of the mills reported that lifter rods are lubricated with lard oil and that spindle-base oil is not changed oftener than every five years.

Ball-bearing spindles were preferred by all mills, although one mill said that higher speeds can be obtained with roller-bearing spindles. Several mills reported that changing from wooden bobbins to paper tubes slows down doffing, but the loss is offset by the larger packages made on the tubes.

---

### STEAM CONTROLS

CONTINUED ON PAGE 113

from the 125-lb. boiler pressure cannot back up to the 100-lb. boiler.

The two boilers burn about 84,000 cu. ft. of natural gas per day during the winter, and they can be converted to oil in 1 min. if gas pressure becomes low. A 6,000-gal. oil tank is connected to both boilers.

The high-pressure-system control is hooked directly to the boiler, while the medium- and low-pressure controls are on the main line. These controls are electrically connected to switches in a room near the center of the mill.

The switches are connected to the master control clock so that the high-pressure steam can be cut off as soon as dyeing is finished for the day. The medium-pressure steam can be cut

**NO NEED TO GO OUT OF THIS WORLD** looking for the right needles for knitting, sewing, felting or tufting. Whatever the size or type you need, just pick up that earth-bound phone and call **THE TORRINGTON COMPANY.**

*Torrington, Conn., U.S.A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles*



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A complete line of gravity, belt, and trolly conveyors—inclined, vertical, and portable (open franchise).

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Complete Range Fork Lifts
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Let our Engineers Show You How to Save Money in Your Mill

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INCORPORATED
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these are the Properties PENFORD GUMS offer for improved warp sizing

Penford Gums are manufactured in a wide range of stable viscosities enabling the superior warp sizing for excellent weaving of combed cottons, viscose, viscose-acetate blends, hydrophobic fibers, blends of hydrophobic and other fibers, and worsted warp yarns.

Penick & Ford, Ltd., Inc. has a staff of Technical Sales Service Engineers available to recommend where and how Penford Gums are best suited to your process and equipment. Informative brochure is available at your request.

(U.S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

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off at a different time if required.

A telephone is close to the controls, and the engineer can receive orders from the production department regarding times of work for the day or week. The engineer changes the controls on the clock according to the working schedules.

**Times Controlled to 15 Mins.**

Steam shut-off times for the boarding and dyeing sections are controlled within 15-min. limits over each 24-hr period. The clock is adjusted the day before the shift starts; but if the shifts do not change, the same adjustment carries through each day.

The low-pressure system is controlled on a weekly basis from the clock. The boilers are switched off automatically at week ends until 6:15 a.m. on Monday.

Full pressure is obtained by 7:00 a.m., and the mill is at a suitable temperature when work starts. This temperature has improved efficiency in the knitting room because the machines are not so cold when they start up.

The control board under the master clock has switches for manually cutting out the boarding or dyeing sections, and there is a master switch for each boiler. Three pressure gauges at the control panel indicate the condition of the boilers. These gauges are regularly checked by the engineer.

The system saves steam and money, and it also saves maintenance men's time and allows them to do a better job of servicing boilers and other equipment.

---

## CARDING PROBLEMS

CONTINUED FROM PAGE 118

"14. Check fan shaft and fan balance
"15. Check ball bearings on beater and fan shaft
"16. Open box on piano evener
"17. Check lift pins and plates for freeness
"18. Check feed and evener rolls and bearings
"19. Check beater lags and settings to feed rolls
"20. Check evener cones, belt, belt guide, and bearings
"21. Check underneath cones and slides that drive back section
"22. Clean and check synchronizer for freedom and smooth operation; repeat for back section
"23. Check feed apron to back feed rolls
"24. Check feed-hopper bearings, shafts, and aprons"

CONTINUED ON PAGE 182

# How a Special New Armco Stainless Steel lengthens life of equipment parts

When tough jobs call for a more durable metal, consider Armco 17-4 PH, a new precipitation-hardening stainless steel. Extra strength and hardness of this special steel can multiply the life span of your equipment parts, slash down-time and maintenance costs.

Machine drives and pump shafts, mixing rods and valve parts, for example, are longer-lasting, need little or no maintenance when they're made of 17-4 PH stainless.

## COMBINATION OF ADVANTAGES

In no other metal is found the same combination of high strength and hardness, corrosion-resistance, and easy fabrication. This unique stainless machines readily, and can be brought to full strength and hardness by one low temperature, short-time heat treatment. There's *no scaling or distortion.*

## CHECK THE COUPON

Just fill out and mail the coupon for full information. Ask your equipment manufacturer to investigate this special precipitation-hardening Armco Stainless Steel.

## HERE ARE THE PROPERTIES OF 17-4 PH:

Mechanical properties of 17-4 PH, Condition H 875
(Hardened at 875± 10F for 1 hour, then air-cooled)

| | Minimum Values |
|---|---|
| **Ultimate strength, psi** | |
| Tension | 180,000 |
| Torsion | 160,000 |
| **0.2% Yield Strength, psi** | |
| Tension | 165,000 |
| Compression | 165,000 |
| **Brinnell Hardness** | 388 |
| | **Typical Value** |
| **Endurance Strength, psi** | |
| 10 million cycles | 90,000 |
| 100 million cycles | 80,000 |

High yield and fatigue strengths of this rust-resisting steel keep parts in service much longer.

**ARMCO STEEL CORPORATION** | **1376 CURTIS STREET, MIDDLETOWN, OHIO**

**I am interested in 17-4 PH stainless for:_____**
**Please send me more information.**

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**ARMCO STEEL CORPORATION**

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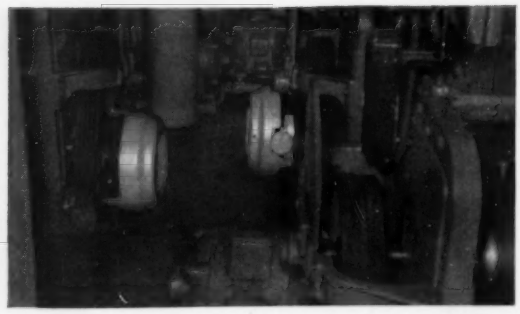

## the Flywheel effect in half the space

Notice in this illustration how the compact Fairbanks-Morse axial air gap motor is ideally suited to spinning frame drive. But in addition to important space saving, the axial air gap motor gives you three times the flywheel effect of the conventional motor.

This larger flywheel effect plus extremely smooth torque acceleration gives smooth starting and smoother operation of the driven machine—resulting in better quality of material produced.

To get the full story of performance on this Fairbanks-Morse spinning frame motor, write Dept. TW-7, Fairbanks, Morse & Co., Chicago 5, Illinois, or 760 Lee St., S.W., Atlanta 3, Ga.

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# a Perfect Pair "WHERE Good Connections COUNT"®

Here is the combination which is delivering the ultimate in economy and accurate control of steam flow to cylinders on slashers, dry cans, embossers, calenders, etc. Outlasts all others.

**The Rotary Union***—The self-aligning and self-adjusting ball bearing mechanical sealing unit that provides a positive rotating seal.

**Unitrap***—The only steam trap that *automatically* delivers peak efficiency at all pressures from 0 to 250 lbs. Warms up fast—saves steam.

Contact our nearest office for full information on this incomparable combination.

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**PERFECTING SERVICE CO.**
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332 Atando Ave. Charlotte, N.C.


CONTINUED FROM PAGE 180

Three mills reported on the use of metallic card clothing as follows:

**Mill G**—"We card 1⅛-in. Strict Low Middling cotton at 12 lbs. per hr. at 100% efficiency. Metallic clothing is stripped once every 48 hrs. with a vacuum stripper and once every 288 hrs. with a brush stripper. Metallic clothing produces a better-appearing web with fewer neps, but we can find no significant differences in yarn strength."

**Mill P**—"Metallic clothing is stripped three times per week, compared with twice per 8 hrs. for regular clothing. Tests indicate metallic clothing is better in every respect.

**Mill S**—"We strip metallic clothing every 144 hrs., compared with three times per shift for regular clothing. Uniformity is 2 to 3% better with metallic, and we have fewer neps. Yarn strength is 10 to 15% greater."

Only a few mills were familiar with high-speed drawing change-overs. The highest speed, 210 ft. per min., was reported by Mill F. This mill processes carded stock, eight-ends-up, 65-grain sliver fed and 70-grain sliver delivered.

With the new drawing, variation dropped from 20 to 15.7%, and reworkable waste jumped from 0.15 to 0.34%. The waste increase was caused partly by a change in creeling methods. The frames have four-roll drafting with metallic top rolls.

### Stop Motion Cuts Waste

Electrical stop motions for roving frames were approved by most of the reporting mills.

Mill B-2 said that roving waste decreased 23% and better spinning conditions resulted after installation of the stop motion. Mill M reported less piecing and fewer doublings, gouts, and break-backs. Mill N was able to increase work assignments from 204 to 272 spindles, but most of the other mills did not increase assignments.

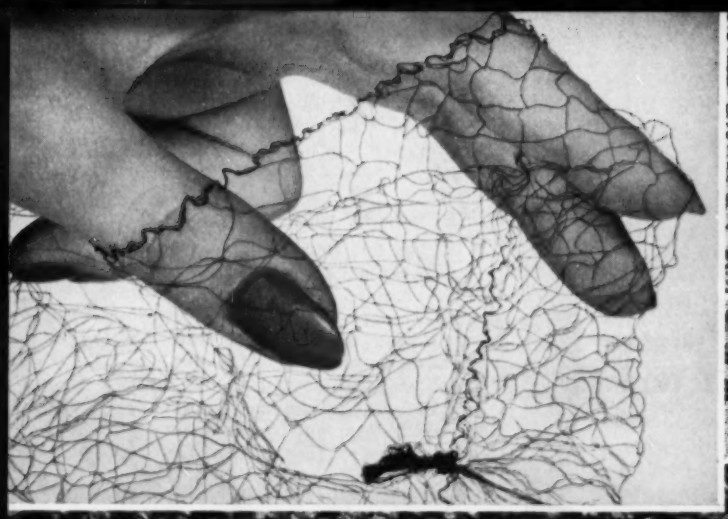
Large-package roving, 12x6½ and 12x7, was reported as giving satisfactory results by all except one mill. This mill complained that on new frames the roving slipped up on the nose of the bobbin and the flyers tended to spread. The roving slippage was stopped by correcting the hand tension; the flyers were reworked or replaced by the manufacturer.

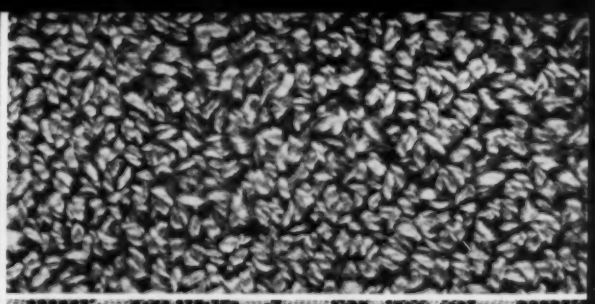
---

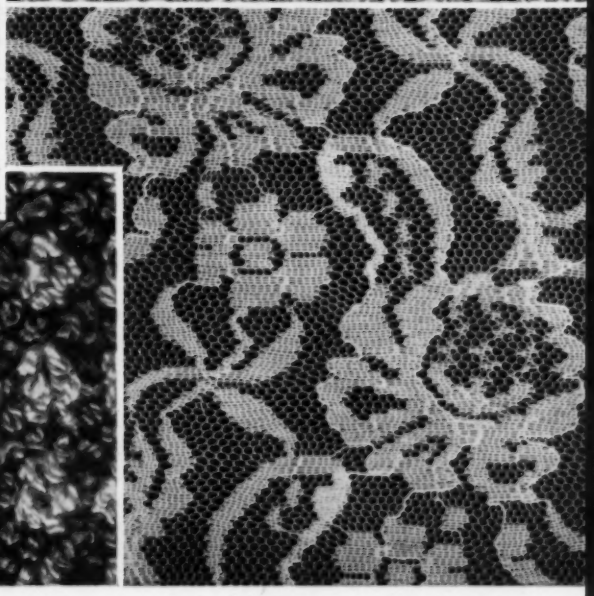
### AVONDALE FINISHES TICKING

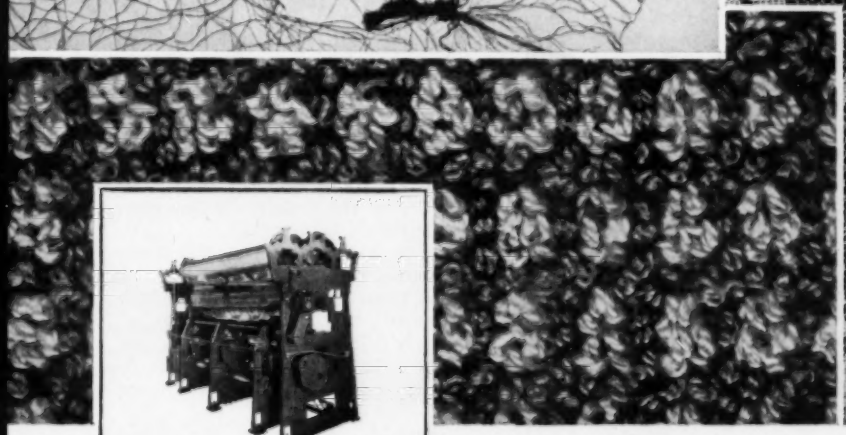
CONTINUED FROM PAGE 93

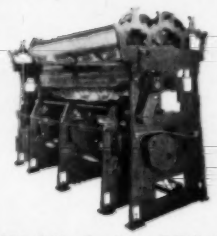
In some combinations, the dark yarns are led to one drying cylinder and the light yarns to another so that this partial drying will eliminate any possibility of color transference during











World's fastest 10-bar Raschel knitter

## —from hairnets to heavy carpet

# ALL KNITTED ON THE KIDDE KNITTER

Why is the Kidde Knitter the most widely used Raschel type machine in the world? The answer is exceptional versatility coupled with outstanding speed and reliability.

The range of gauges of the Kidde Knitter will produce anything from the sheerest tulle to heavy carpet — all with equal dependability. And special attachments make it even more versatile:

- A sinker bar produces tighter stitches . . . eliminates selvage troubles.
- A power let-off attachment for controlling rubber beams improves quality of elastic fabrics.
- A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

These are just a few of the advantages that account for the popularity of the Kidde Knitter, both with the knitter who specializes in one type fabric and the knitter who depends on flexibility to meet the requirements of his trade. If you specialize in any one of the following fabrics . . . elastic fabrics, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or carpeting . . . or if you need versatility encompassing many of these types . . . the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

**SEND FOR FABRIC SAMPLES**

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details. Dept. KA2

**TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS**
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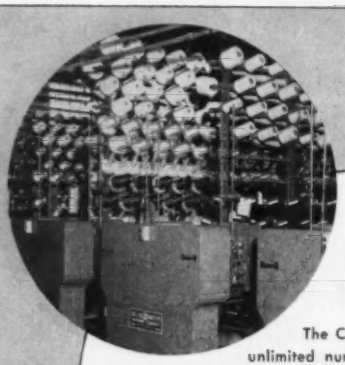

The COLLINS C/B
Single or Dual-Drive
*Novelty Twister*
is the Most Flexible Twister for NOVELTY Yarns

The Collins Novelty Twister will produce an unlimited number of novelty yarn constructions — from all types of yarns — from the finest to the coarsest counts. This twister has long been the undisputed leader in the novelty field, and such improvements as the exclusive 7-speed Ultrohead with reversing attachment, and the Dual-Drive which allows each side of the frame to be run independently of the other in regard to speed, twist direction, and yarn construction, make this Collins Novelty Twister the ideal for novelty yarn mills.
There is a Collins Twister for Every Ply Yarn Construction . . . Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Single or Dual-Drive, and Special Twisters. Write for full information.

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*There is a Collins Twister for Every Ply Yarn Construction*

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*over 110 years' proven performance—*
LATCH AND SPRING NEEDLE KNITTING MACHINES

"mostest runnin' knittin' machines in the plant!"

The Head Knitter of an U. S. mill made this brief yet factual statement. Knitters in the know are quick to substantiate the comment, with good reason. The Tompkins record stands undisputed . . . over 110 years of proven money-makers to the Knitting Industry.

We see some Tompkins machines running that are 70 years old — still going strong despite their outdated performance in comparison with new model Tompkins machines. It's like seeing an old Model T alongside a new '56 Ford! Let us help you put in a modernization plan.

— ESTABLISHED 1864 —
TOMPKINS BROS. CO.
623 Oneida St. • Syracuse 4, N. Y.

TOMPKINS
MODERN SPRING NEEDLE KNITTING MACHINE
with changeable feeds to make
• Fleece Coatings • Sweat Shirts
• Jersey • Terry • Patterns
• Stripes • Lastex Inlay
—all on the same machine!


drying. Then all yarns converge on the two 30-in. cans to complete the drying.

### Extra Lease Rods Help

Going one step further to insure a knife-edge definition of stripes, Avondale employs the usual set of lease rods for each beam and then divides each color by other lease rods just before the yarn enters the comb for final alignment. Stray fibers that might transfer from one yarn to another are kept out by this extra separation, and rolling and twisting are reduced.

Avondale gets uniform size mixes by mechanizing and controlling every step. A silo that will hold considerably more than a hopper-car of starch is equipped to remove pearl corn starch from the car by vacuum. A screw conveyor system moves the starch from the storage silo to a hopper in the slasher room.

When a batch of size is needed, the overhead hopper is moved to the starch conveyor outlet, the conveyor is started, the required amount of starch is delivered to the hopper, and the conveyor stops automatically. A built-in scale is part of the hopper unit.

Starch is delivered to the appropriate kettle by moving the hopper on its tracks. The right amounts of water and fatty matter are added, and the mix is brought to a boil.

### Starch Is Homogenized

The mix is brought to the boil and then pumped through a Gaulin homogenizer at 1,800 lbs. pressure. Then it goes to a storage tank and is kept at 200 to 205° F. while being used. The cooked size mix is constantly circulated from tank to slasher size box.

Automatic level controls keep the size box supplied with starch. The system eliminates variables in size consistency, temperature, and amount applied. Other important advantages of the starch-handling system include cleanliness and a considerable saving in raw-material costs and handling.

With a closely controlled product to work from, the finisher's task is simplified. Many ticking styles have enough body off the loom so that a run through a hydraulic calender at 10 to 12 tons pressure is all that is required to get the necessary surface and hand.

Other styles may need building up by a run through a starch-and-softener formula.

A three-roll pad, followed by 20 dry cans and a gas-fired tenter, is used to finish tickings. The range has auto-

# BRIEFS
## for caustic soda buyers

# New booklet
# Barge delivery
# Flake sizes
# Drum styles

**Useful facts** on buying caustic soda are at your fingertips in this new pocket-size booklet.

Title: *Caustic Soda Buyer's Guide.*

Contents include a list of reasons *pro* and *con* switching from 50% to 73% liquid caustic.

There's a factual discussion of the comparative economics of both strengths, including a handy nomograph to help you figure which strength is your better buy.

The booklet also contains a nomograph that helps you estimate your liquid caustic requirements for various process solutions.

There's information on solid and flake caustic, too. Two tables show at a glance the dimensions and capacities of the many containers in which you can buy Hooker caustic soda.

Finally, there's a list of important points to consider when you're looking for a caustic soda supplier.

Check the coupon at right for a copy. Or write us if you'd like more than one.

**Can you save** buying by barge?

If you use large tonnages of 50% liquid caustic soda, and can receive by

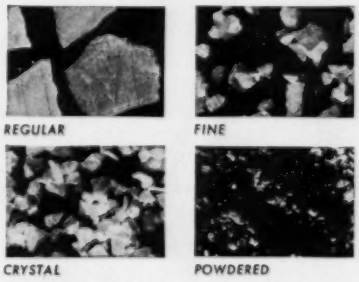
water, you may cut freight and handling costs substantially with barge service.

All Hooker plants and caustic terminals offer barge service as well as tank car service, since all are located on deep water.

If you think there's a possible saving here, one of our representatives will be glad to discuss barge delivery with you.

**Which flake size?** It's easy to be sure of the best possible caustic soda flake size for your process, when you buy Hooker caustic.

You have your choice of the four sizes here—all shown actual size.




*Regular, fine,* and *crystal* flake are non-dusting—carefully screened for uniformity. We're extra-fussy about flake *thickness,* too. These flakes are hefty enough to take the jolts and jouncing of transit, and still reach you at full size. Yet they're thin enough to dissolve quickly when you're ready to put them to work.

For advice on the best flake size for your needs, write us, outlining the intended use.

**Which drum style?** You can order Hooker flake caustic soda in either of two drum styles.

The widely-used 400-pound drum shown above has a 14-inch opening that makes emptying safe and easy. The lid clamps on tight to protect contents in transit and storage.

Or you may prefer the full-open-head drum (not shown here). It gives you extra convenience in handling, and you can re-use the drum for many purposes. It costs a bit more than the 14-inch-opening drum.

**Check** items you'd like to receive:

- ☐ *Caustic Soda Buyer's Guide*
- Technical data on:
- ☐ 50% Liquid Caustic Soda
- ☐ 73% Liquid Caustic Soda
- ☐ Flake Caustic Soda

**For information** on these other Hooker chemicals used in the textile industry, check below:

- ☐ o-Dichlorobenzene
- ☐ Lauryl Pyridinium Chloride
- ☐ Sodium Sulfhydrate
- ☐ Sodium Sulfide

*Clip and mail* to us with your name, title, company address.

HOOKER CHEMICALS PLASTICS

8-7239

**HOOKER ELECTROCHEMICAL COMPANY**

1707 Forty-Seventh Street, Niagara Falls, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES



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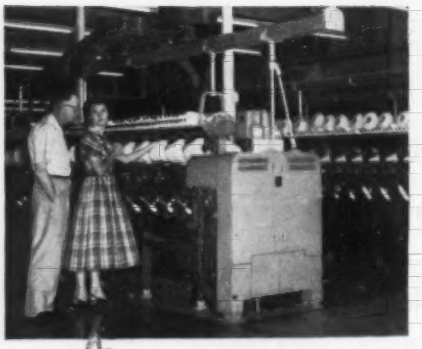
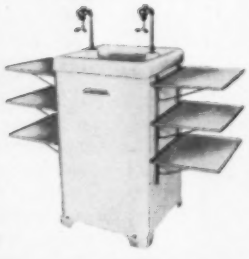


dual *safety!*

For an unfailing supply of cool water, you can depend upon Halsey Taylor Coolers. They're safe in operation, safe to drink from . . . explosion-proof coolers, cafeteria models, wall fountains, pedestals. Write for catalog. The Halsey W. Taylor Co., Warren, O.



HALSEY TAYLOR

*Industry's Favorite* Coolers

TW-62

# *19th Southern Textile Exposition*

## October 1-5, 1956

**(Monday through Friday)**

**Textile Hall — Greenville, S. C.**

See on exhibit latest developments in cost cutting, quality building machinery, equipment, supplies, techniques.

***Show Hours: 9 A. M. to 6 P. M. Make your plans to attend!***

Room Reservations should be made in advance—Write

**TEXTILE HALL CORPORATION**

**GREENVILLE SOUTH CAROLINA**

*"An institution of the textile industry since 1915"*

matic temperature control; and with the extra boost possible from the Vapofier unit used to heat the air, it is easy to maintain 350° F. The combination of cans and hot air gives 90 yds. per min. or better on most styles run at the plant.

To help get consistent results, a relatively high humidity is maintained by atomizers located overhead every few feet. Quick return to normal regain is important in the final evaluation of a cotton finish; and by keeping operating areas at a constant humidity, one more variable has been eliminated in the production of uniform finishes.

### FASTER PRODUCTION

CONTINUED FROM PAGE 119

Worktables and racks are constructed so that they can be moved around to fit in with the flexible arrangements of the machines.

Each subassembly section has its own supervisor. The sewing room is split into two sections. An expeditor in each section keeps the goods flowing freely through his section.

Each lot has tickets with perforated stubs removed at each operation. The expeditor matches the numbers on the tickets before the collars and plackets are sewed on the garments.

Wonderknit moved to Galax from Lindenhurst, L. I., nearly three years ago when a training and pilot operation was set up. There were 70 women engaged in the pilot plant, and today the plant employs 270 people.

### PRESSURE ROLLS

CONTINUED FROM PAGE 99

taut in both hands and lets it slide through his hands as the cover is wound on the roll.

When the roll is completely recovered, the operator stops the lathe and winds another strip of masking tape around the other end of the roll. Then he cuts the cover off flush with the end of the roll. With this cutting method, an 8-in. taper is left to begin re-covering the next roll.

To re-cover a pressure roll for a 46-in. XD loom, 19¼ ft. of cover are used; 26 ft. are used for a 64-in. XD loom.

#### Advantages in Weaving

After a roll is re-covered, it is never put in a loom until the glue has dried 1½ hrs. However, this waiting time is not a problem at Shelby because several spare re-covered rolls for each loom are always kept in the mill

# How to turn your

# sizing problems

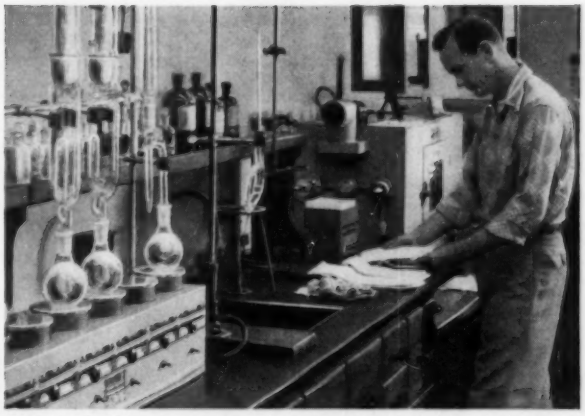
# into

# sizable profits

Are you up against undue breakage of yarn on slasher or looms? Or having tough going in sizing and de-sizing spun rayon, blends or synthetics? Are your re-starching, printing and back-filling operations as economical and effective as they should be?

If you are faced with these or other sizing problems our Technical Staff can give you a powerful assist toward a profitable solution. For example:

In our modern textile laboratory at Greenville, S. C., Corn Products technicians are constantly engaged in seeking solutions to this type of problem. Important projects now under way on behalf of textile mills include check tests on size content of yarns, performance tests of various formulas, perfection of size formulas to meet the specific needs of certain mills.

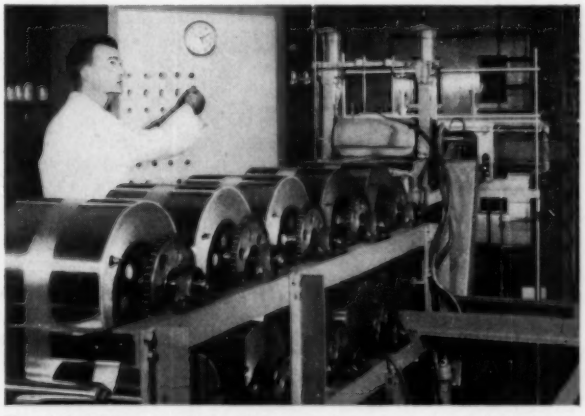


Check-testing yarns at Corn Products field laboratory, Greenville, S. C. These and many other projects are undertaken on behalf of textile mills.

**New horizons for textile research**

In addition, the Corn Products Multiple Fellowship program sponsors a unique Pilot Plant Slasher Assembly installed at the Mellon Institute, Pittsburgh. Designed and constructed to facilitate study of sizing of all types of natural and synthetic yarns, this flexible assembly permits types of research never before possible—leading to new and better products for the entire textile industry.

Through constant research, continuing quality control and the development of new products and techniques, Corn Products is helping the industry produce higher quality fabrics, in greater volume, at lower unit cost.



Partial view of pilot plant slasher assembly at Mellon Institute. Components include creel with raw yarn, pretentioning mechanism and electrical stop motions; control panel; condensing and leasing apparatus; main slasher unit and size box quetsch assembly.

**Ask the man from Corn Products:**

With complete laboratory and technical facilities at his disposal, he can point the way to a solution of your problem. Write or phone for information, no obligation.

1906 • **50th ANNIVERSARY** • 1956

**CORN PRODUCTS REFINING COMPANY**

17 Battery Place, New York 4, N. Y.

**Corn Products make these famous starches for the textile industry—**

**Eagle® • Foxhead® • Globe® • Hercules • Ten-O-Film® • Globe® Dextrines & Gums**



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big business, big profits for you

making top quality *CHILDREN'S SWEATERS* . . . economically, on performance-proven *ORDNANCE* OGA-OTA circular, fully automatic knitting machines

● Manufacturers of children's sweaters, like manufacturers of men's and women's knitted outerwear, enthusiastically endorse and recommend ORDNANCE equipment. They praise its low operating costs—based on total production of FIRST QUALITY MERCHANDISE—top-speed change-overs that permit the style changes necessary for volume sales! Install OGA or OTA machines and

**you *safely* invest in equipment of *proven* performance; why, then, *risk on experiment?***

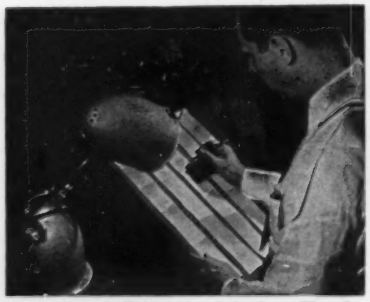
NOW, with new, exclusive refinements and added operating range OGA and OTA machines are your soundest investment in equipment. ● Investigate the all-new 32" diameter machines to produce coarser gauge goods as well as the finer gauges usually made on smaller diameter machines.

ORDNANCE GAUGE CO.
Amber & Hagert Sts.
Philadelphia 25, Pa.

SALES REPRESENTATIVE
MAC. M. ROTHKOPF
317 Bushwick Ave., Brooklyn, N.Y.

OGA OTA ORDNANCE GAUGE CIRCULAR, FULLY AUTOMATIC KNITTING MACHINES

HAE-OG197-256



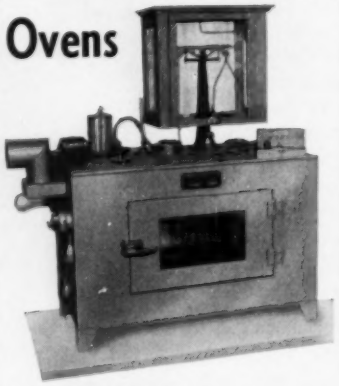
Magical Black Light Ends Color Matching Rejects

Here at last is a method that takes the guesswork out of color matching — and eliminates rejects. Under Blak-Ray light, even the slightest variations in color tones are visible. Plants report that preliminary inspection under black light is saving its cost every week by eliminating rejects before they happen.

Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters — are fast adopting the black light system.

Full details are given in new Case History #111X, available free from the **Black Light Corporation of America**, Distributors for Ultra-Violet Products, Inc. 5114 Walnut Grove Avenue; San Gabriel, California. Distributors in principal cities.

Textile Testing Ovens



EMERSON OVENS

For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 baskets 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights, and automatic temperature control. Table space 20" x 40".

Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.


supply room.

Some of the original rubber-cork rolls placed in the looms in 1950 are still running. In addition to the long running time, the rolls can be patched. When hard-twist yarns in cotton selvages, for example, cut into the pressure-roll cover, the worn section of cover is cut off and a new section is added. These patches do not come loose.

The roll covers have several advantages in weaving, according to C. H. Williams, overseer of weaving: "Since the covers are resilient, they reduce set marks on several styles of cloth woven at Shelby. They keep the cloth from slipping at the take-up roll and, as a result, keep the selvages weaving straight in the temples and reduce the beat-back on heavy weaves."

## Control Sock Sizes

CONTINUED FROM PAGE 125

Dimensional variations also influence fabric properties. Fabric texture changes with alteration in lengths. A short sock with 120 courses in the foot will have 12.5 courses per inch. A long sock with the same number of courses will have only 11 courses per inch.

Fabric properties alter according to the number of courses per inch. A change in courses per inch in a wool sock means a change in the shrinkage characteristics.

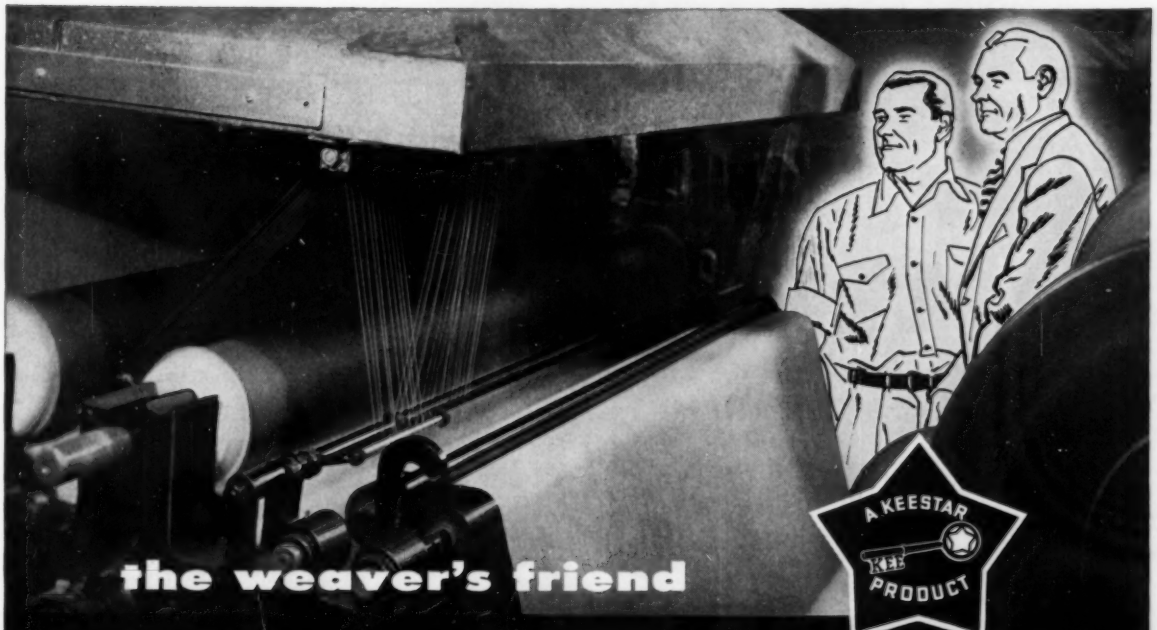
When fabrics of different knitting stiffnesses are relaxed in a warm alkaline liquor, the length shrinkage will vary from 3.6 to 11.3. The width dimensions will also be affected. A tightly knitted fabric has a high width but low length relaxation. Loose-knit fabrics have low width and high length shrinkages.

### Felting Shrinkage

The felting shrinkage is also related to the density of knitting. Fabric with 21.8 courses per inch has an area felting shrinkage of 25%, while a 16.7-course-per-inch fabric has 43.2% shrinkage. Some goods in the same batch of articles might therefore have a satisfactory performance while others may be the subject of consumer complaints.

When surveys were made to analyze the variations to prevent their recurrence, the variations fall into two main groups: (1) variations occurring between machines (2) variations occurring within the same machine.

A test of four machines set to produce the same foot size showed that




# VICTOR Mill Starch

## always uniform and backed by Keever Service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898



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MACHINES FOR YARNS • TWINES • CORDS • ROPES

SPECIALIZED EXPERIENCE
TWISTING • STRANDING
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COTTON • JUTE • MANILA • SISAL
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HASKELL-DAWES MACHINE COMPANY
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A copy of this quick-reading, 8-page booklet is yours for the asking. It contains many facts on the benefits derived from your business paper and tips on how to read more profitably. Write for the "WHY and HOW booklet."

*McGraw-Hill Publishing Company, Room 2710, 330 West 42nd St., New York 36, N. Y.*

each machine was making a range of foot sizes. This range for No. 1 machine was from 10.3 to 11.1 ins. with an average length of 10.9 ins. The average length from No. 2 machine was 10.5 ins., No. 3 was 10.6 ins., and No. 4 was 10.4 ins.

The difference between these averages is the between-machine variations due to a difference in machine setting. If the machines were set more precisely, the over-all variation, which ranged from 9.6 to 11.1 ins., could be reduced to a range equal to the within-machine variation.

Between-machine variation may account for 50% of the total variation. This variation can be controlled by a system of checking, measuring, and recording.

### Don't Overadjust

The measurements should be recorded so that operators can see trends that may be taking place. Adjustments should be based on the average rather than on an individual reading. Overadjustment of knitting machines is responsible for more dimensional variations than too few adjustments.

Within-machine variation is caused by such things as atmospheric and machine temperature fluctuations, yarn irregularities, dyeing and finishing treatments, lubricants, machine speed, humidity, and moisture content of the yarn. These factors are practically impossible to control individually on a commercial basis; but they can be controlled collectively with knitting control devices such as the HATRA yarn-speed meter, which is read in conjunction with the machine speed.

Strict control of dimensions may mean a variation in weight of hosiery in the case of irregular yarns. Regularity of size is preferred as it brings about a cost reduction and greater consumer satisfaction.

If socks are all made in equal size, an increase in production and reduction of labor costs would result in the pairing department. Control of lengths would also mean a saving in raw materials because too-long lengths would be eliminated.

## COMBED YARNS

CONTINUED FROM PAGE 109

in almost every department, including weaving, has reduced cleaning time greatly. Cleaning hands were added in conjunction with the mechanical cleaners to allow machine operators more time for production work and rest periods.

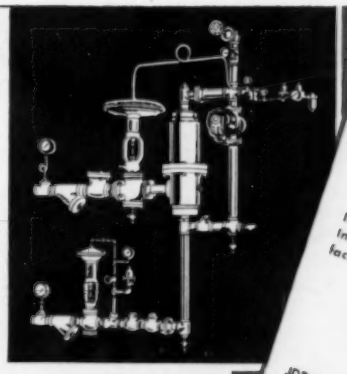
At the present time, Ivey is operating 400 Draper X-2 automatic looms that were installed around 1950, along with Parks-Cramer air-changing and

**Pick** INSTANTANEOUS HOT WATER HEATERS

ENGINEERED FOR SERVICE

Industries everywhere are replacing outmoded water heaters with Pick Instantaneous Water Heaters. Here are the reasons:

Pick STEAM INJECTION WATER HEATERS



GIVES YOU MAXIMUM EFFICIENCY

- Water is heated INSTANTLY by steam injection. Fuel savings are high because there is no waste — water is heated only as used.
- Pick Heaters maintain continuous flow at preset temperature for bleaching, dyeing, scouring, etc.
- Safe, Quiet Operation. Exclusive "Pressurizer Piston" assures maximum safety and eliminates hammer noise and vibration on continuous or "start and stop" loads.
- No storage tanks required. Can be installed in corners, on walls and overhead. Saves valuable floor space.
- Installation is simple and inexpensive . . . only ordinary pipe connections are required

PICK MANUFACTURING CO.
WEST BEND, WISCONSIN

Pendleton Woolen Mills
HIGH GRADE WESTERN WOOLENS

Pick Manufacturing Company,
West Bend, Wisconsin

October 31, 1955

Gentlemen:

In reply to your letter October 25th, we can say your Pick Instantaneous Water Heater has performed very satisfactory service since it has been installed in our plant.

Very truly yours,
PENDLETON WOOLEN MILLS
J.D. Buchanan

JDB:cd

a very SATISFACTORY PERFORMANCE at Pendleton mills . . .

in daily use at
- BATES MFG. CO.
- PEPPERELL MFG. CO.
- DAN RIVER MILLS
- FIELDCREST MILLS

and scores of others.

WRITE TO DEPT. 145 FOR BOOKLET ON HOW PICK HEATERS CUT COSTS OF HOT WATER.



# Sales doubled in '55

THERE MUST BE A REASON—and there is!

## ECLIPSE BOBBIN HOLDERS ARE THE WORLD'S FINEST

It's no exaggeration. Sales of Eclipse Bobbin Holders really skyrocketed in '55, and they're continuing to rise with every passing month. There is, of course, good reason for this gratifying sales increase. The textile industry has discovered that this bobbin holder—providing light, controlled tension which diminishes with the size of the package—drastically reduces breakbacks. This cuts maintenance requirements with resultant savings in labor costs. There is really no excuse for using old-fashioned, inefficient wooden skewers today. The modern way to spin cloth is with durable, economical Eclipse Bobbin Holders. And our increased plant capacity now assures you of prompt delivery. Better place your order today.

PROMPT DELIVERY

ECLIPSE MACHINE DIVISION ELMIRA NEW YORK

Bendix AVIATION CORPORATION

humidifying equipment and traveling loom cleaners. This combination of equipment, according to the management, has contributed greatly to the quality of the fine-combed fabrics woven by Ivey Weavers, Inc.

## ELECTRICAL TESTERS

CONTINUED FROM PAGE 123

factory a.c. work include a clamp-on ammeter and a clamp-on wattmeter or power-factor meter. Clamp-on ammeters are designed to read both voltage and current. These instruments are not precision instruments; but they are very useful for checking current flow through main feeders and branch circuits to motors, transformer banks, etc.

The instruments are accurate within 3%. The accuracy figure is improved if the manufacturer's instructions are followed closely while the instruments are being used.

### Additional Testers Needed

When you choose between a clamp-on wattmeter or power-factor meter, you must consider the type of load. The wattmeter is best if many heating loads are connected to the system, but the power-factor meter should be selected when all the measuring is done in motor circuits.

Industrial analyzers or a.c. load visualizers can be used to insure rapid restoration of service or production. These instruments are usually accurate within 1%.

The industrial analyzer is bulky and heavy. It has four instruments—volts, amperes, watts, and power factor—contained in one carrying case. It also contains the necessary multipliers and current transformers. With the instrument, all information about the behavior of a particular circuit is presented simultaneously.

The a.c. load visualizer is a compact single instrument, which also contains multipliers and current transformers. But only one circuit characteristic at a time can be presented, and some factors must be determined by referring to a chart or graph furnished with the instrument.

Many other instruments for testing electrical components are available, including recording instruments, meggers, and power-factor and phase-sequence indicators.

## CUT WAREHOUSING COSTS

CONTINUED FROM PAGE 97

fully pinned onto a frame in a continuous spiral that keeps each layer of fabric separated from the other. This makes a bulky package with a relatively small amount of yardage per carton. But by turning the cases 90° and adding newly designed racks, the warehouse now handles 35% more fabric than it could before the problem was attacked.

Cartons are stacked five high and easily placed or removed by one man with a fork-lift truck. Before the warehouse was reorganized, it took six to eight men 2½ hrs. to load a trailer truck. Now one man with a fork-lift truck can load or unload a trailer in 20 mins.

Because so much of the production at Caromount is pile fabric shipped on frames, trailer loads are bulky rather than heavy. The mill set up specifications for trailer bodies that could be loaded solidly without waste space. Result is more-economical transportation costs.

## POINTERS

CONTINUED FROM PAGE 127

record waste; inspect, count, and dispose of bad bobbins of yarn; obtain yarn weights; issue travelers and small repair parts; and look after a myriad of details. How much time does he have left for supervising and planning?

Although spinning-room examples have been used here, cases of misused skill can be found in all departments of the mill. Card tenders often transfer and lay up the laps for their cards; tying-in machine operators leave their machines idle while they hunt up beams and patterns; loom-fixers drop work on a loom to get oil cup and grease gun to lubricate a loom with warp out; a cloth grader spends as much time procuring and disposing of cloth as he does actual inspecting; and so it goes throughout the mill.

### Evaluate Your Own Job

There are probably jobs in some mills, or perhaps all the jobs in a mill, that are efficiently laid out to fully utilize all the skills of the employees.

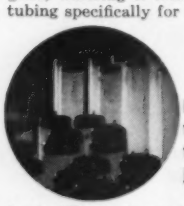
**Ask these questions, too, when you judge a fluorescent lamp . . .**

**Is your investment protected?**

Check Westinghouse Fluorescent Lamps against any other brands you are now using. Check them for maintained brightness, long life, uniform appearance. If you are not entirely satisfied on all counts, your full purchase price will be refunded.

**Is it built with tailored glass?**

Quality of glass in a fluorescent lamp directly affects lamp performance. Westinghouse makes all of its own fluorescent lamp glass, tailoring it from silica to finished tubing specifically for fluorescent service.



**Is it the correct type, size and color for the lighting job to be done?**

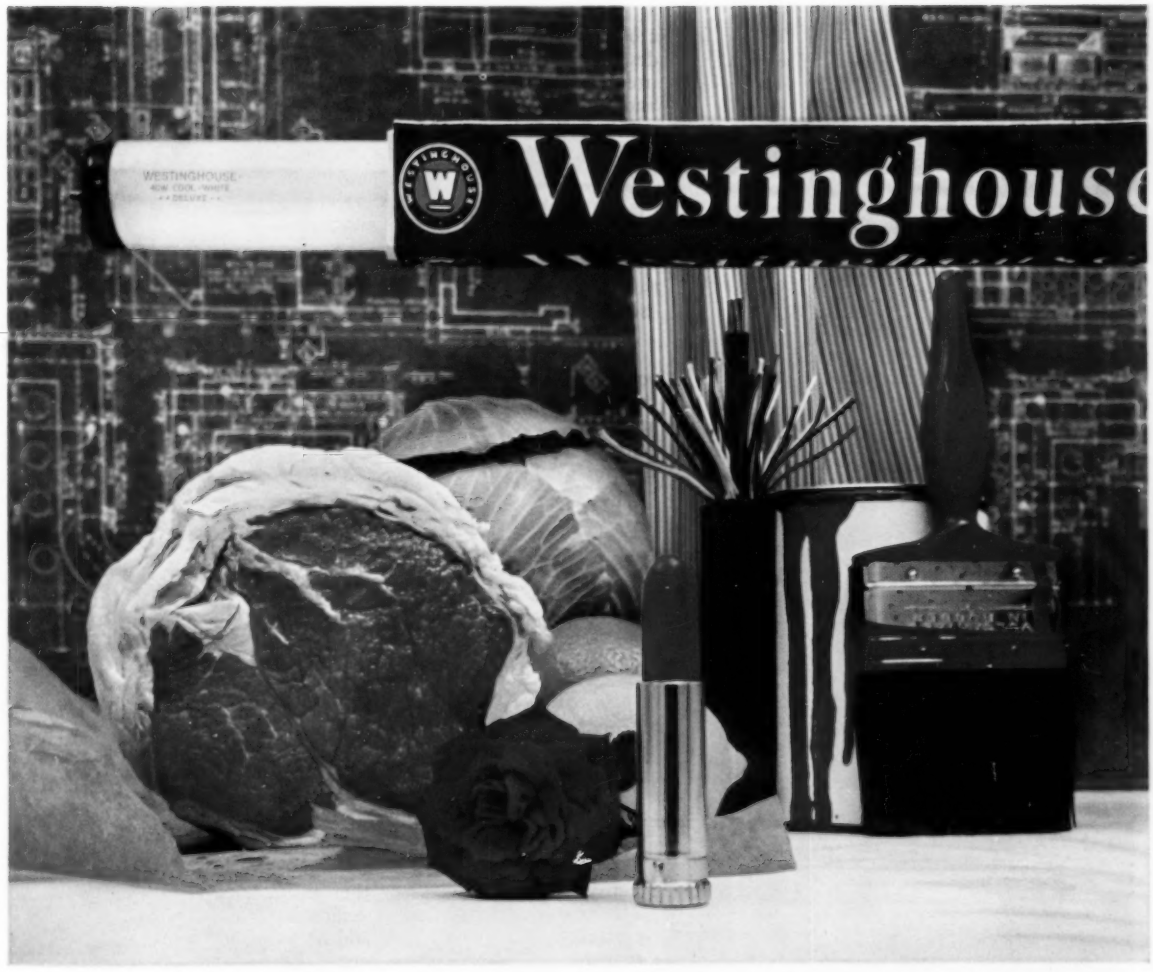
In the Westinghouse fluorescent family of 290 different lamps—including Slimline and Rapid Start—there's a type and size precisely right for every office, plant and merchandising application. Colors include seven different shades of "white" alone.

For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp Representative. "You can be sure if it's Westinghouse."

***WATCH WESTINGHOUSE!***

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

how to judge a fluorescent lamp . . . point no. **5**




# ask about COLOR RENDITION

If you're like most businessmen today, you know how the proper use of color can speed a lagging production line, work wonders with office morale, give merchandise extra sales appeal. What you may not know, however, is that the color of any surface—be it desk top or cabbage leaf, electrical lead or your secretary's complexion—is largely determined by how that surface is lighted. *And* that light just right for Job A may be all wrong for Job B. Westinghouse fluorescent lamps—available in seven different shades of "white" alone—offer you precisely the proper color of light for jobs from A to Z. "You can be sure if it's Westinghouse."

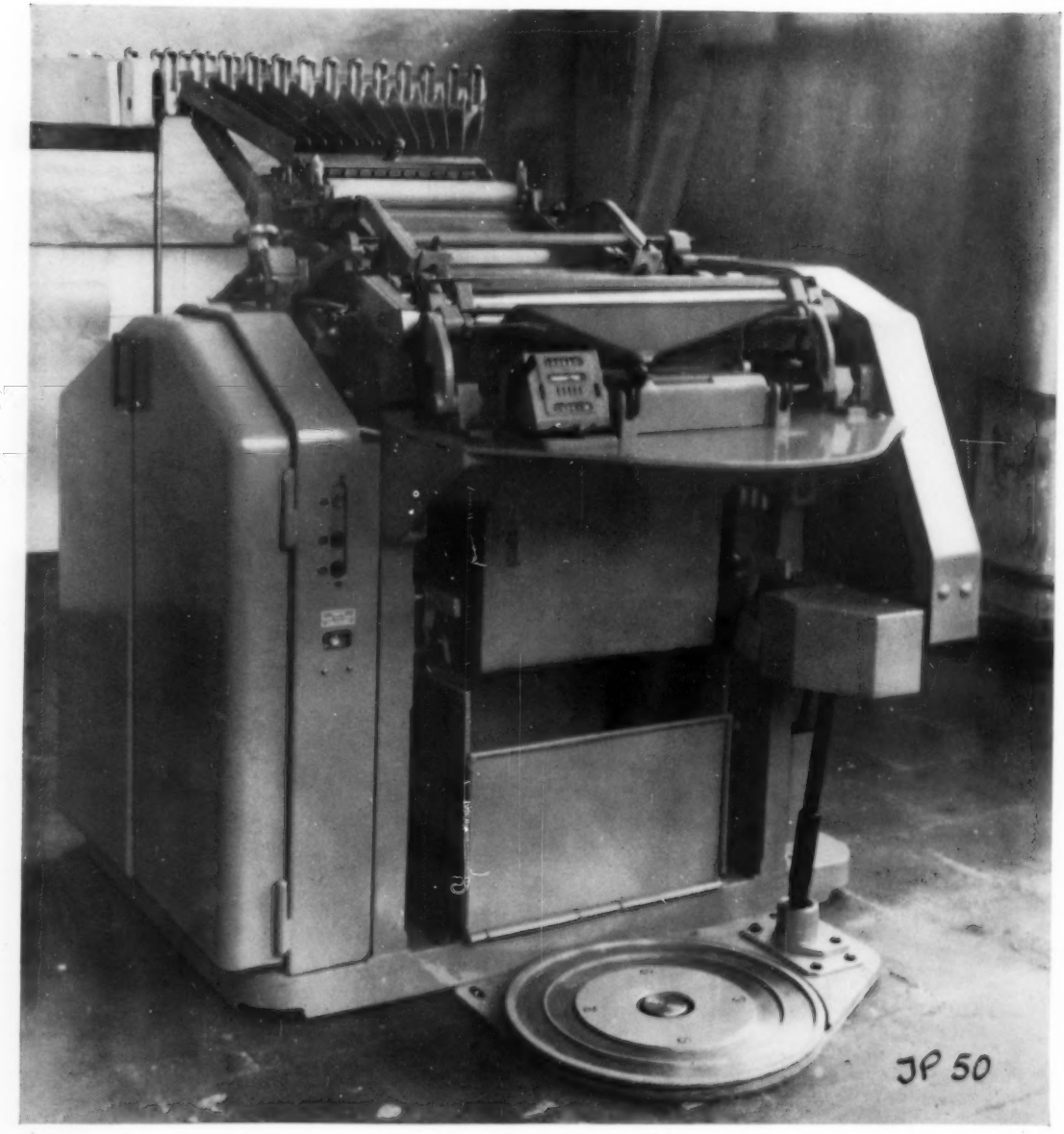
***WATCH WESTINGHOUSE!***

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

***WORLD FAMOUS***

# SCHLUMBERGER COMB

***for French-Type* Worsted Mills**




**OUTSTANDING** for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

*Also other worsted preparatory machinery*

## N. SCHLUMBERGER & CIE

GUEBWILLER, ALSACE, FRANCE
Founded 1808

The labor costs may be exactly in line with results obtained, the pay of everyone being in proportion to their skill and effort. But such mills and such jobs are rare because of the constant change that takes place. To keep all jobs balanced would require constant evaluation, layout, and job and rate changes.

The rearrangement of jobs and full use of skills is a fertile field for cost savings and more-efficient operation in most mills. Look around and see if you are using all your experienced labor to best advantage. Evaluate your own job—how much of your time are you spending on minor details that could be just as easily delegated to a less-experienced and lower-paid employee?

Although you may think that you have a very efficient organization, an open-minded appraisal can often uncover some inconsistencies in work performed and pay received. The difference may be slight; but when you can get the same job performed here and there for a few cents less per hour and thus release skilled labor for precision work, the effort is worth while.

If a monetary saving and an increase in efficiency can be achieved on one job by the full utilization of skilled labor, the potential for an entire mill may be the deciding factor between profit and loss.

## NEW DYES & CHEMICALS

CONTINUED FROM PAGE 140

### Softener

**Wica Softener Apt.** . . . an amphoteric compound of 50% concentration that works well with resin finishes over a wide pH range. Suggested for fibers normally difficult to soften, the product resists laundering, dry-cleaning, chlorine bleaching, and yellowing at high temperatures. It is compatible with many other finishes. Wica Chemicals Inc., Old Concord Rd., Charlotte, N. C.

**Circle D-9 on Reader-Service Card**

### Ultramarine Blues

**Seagull Ultramarines** . . . British products ranging in shade from brilliant blues to delicate violets. Recommended for bluing or tinting where extreme lightfastness is wanted. Distributors are Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York 13, N. Y.

**Circle D-10 on Reader-Service Card**

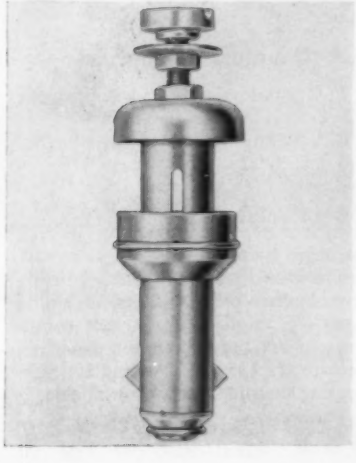
### Improved Black Base

**Aniline Salt** . . . of improved solubility, free of grit, and with a controlled pH, is said to produce more-uniform blacks of intense shade and bloominess even under artificial light. Recommended for dyeing or printing. American Cyanamid Co., Dyestuff Dept., Bound Brook, N. J.

**Circle D-11 on Reader-Service Card**

## EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 138



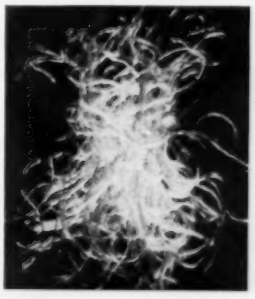
### Bobbin Hanger

A low-cost bobbin hanger with a positive latch has been developed by Hartford Machine Screw Co., Hartford 2, Conn. The top hanger for overhead creels has a sturdy cast body similar to the split-base Hartford spindle. Creeling is said to be faster and easier than with wooden skewers.

The bobbin is slipped easily into place; and this action trips a latch that sends a pair of ears from within the hanger to support the bobbin. When the bobbin is empty, it is removed by giving it another slight lift that causes the ears to snap back inside the hanger.

The antifriction suspension has a free-running ball construction that

Cut
THREAD WASTE
LIKE THIS



MAKE FIBRE
LIKE THIS

With a Taylor-Stiles thread waste cutter you can cut all kinds of tangled and mixed length thread waste, and after opening the cut yarn you will have a fine fibre for further processing.

*Write for illustrated folder showing Taylor-Stiles thread waste cutters and describing the principles on which they operate.*

TAYLOR-STILES
& Company
15 Bridge Street Riegelsville, N. J.

**DARY**
*Ring Travelers*

## OUR SPECIALTY!

**Our specialty is making Dary ring travelers — an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.**

**When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!**

***Always specify DARY Ring Travelers***

**THE DARY RING TRAVELER CO.**
**TAUNTON, MASSACHUSETTS**
LINDSEY I. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD 'JACK' RHYMER, BOX 2261, GREENVILLE, S.C.


protects the yarn from strain and produces more-uniform spinning. All parts are rustproof. A brake is available if required

**Circle T-18 on Reader-Service Card**

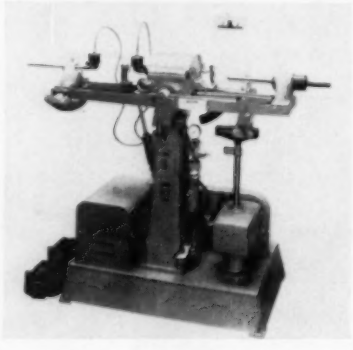
### Bobbin-Stripping Machine

A bobbin-stripping machine that strips 100 bobbins per minute is announced by George Fischer Ltd., Schaffhausen, Switzerland.

The machine is for straight-barrel bobbins with heads of $\frac{1}{8}$, $1\frac{1}{16}$, or $1\frac{3}{16}$ ins., and three or four steel rings. Bobbins from $6\frac{3}{4}$ to $10\frac{1}{4}$ ins. may be stripped.

The manufacturer claims the bobbins are not damaged, practically all bobbins are stripped without misses, and a vacuum motion cleans waste yarn from the machine.

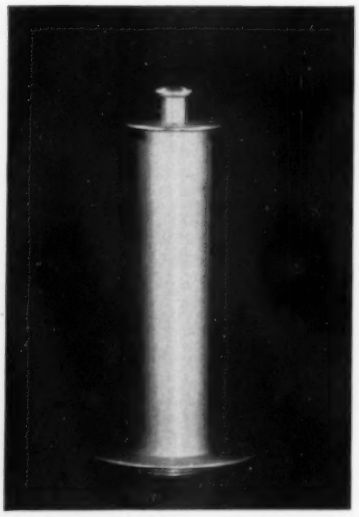
**Circle T-19 on Reader-Service Card**



### Tester for Tire Cords

Improved tensile testing of tire cords is made possible by Spruance clamps and auxiliary equipment announced by Scott Testers, Inc., 95 Blackstone St., Providence, R. I. The clamps are available on Scott's IP-4 Tensilgraph and are pneumatically controlled. Other advantages of the clamps are given as: automatic adjustment, uniform pressure, and even tension.

**Circle T-20 on Reader-Service Card**



### Metal Twister Bobbin

An all-metal ring-twister bobbin has been developed by Cloverleaf-Freeland Corp., Hazelton, Pa. The bobbin weighs only $12\frac{1}{2}$ oz.

Because the bobbin is all metal, the manufacturer says it can be used under extremely high temperatures and even for autoclaving yarns.

An aluminum tube runs through the center of the bobbin and acts as a full-length spindle bearing. The driving plate at the bobbin can be replaced to compensate for wear from the dog.

**Circle T-21 on Reader-Service Card**

### Pick Counters for Looms

Pick counters with a printing device are being manufactured by Injecta Ltd., Teufenthal/Aaran, Switzerland, and are being sold in the U. S. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. The results of each shift's operation are registered on a card by pressing a lever.

The manufacturer is also producing several other pick counters, including a pay-day totalizer, single-shift counters, and two- and three-shift counters, all with reset levers. Adding and subtracting counters are also available.

**Circle T-22 on Reader-Service Card**

CONTINUED ON PAGE 200

# "8 years of service but no maintenance with our Stainless Steel dyeing equipment"

Matching of shades is much simpler now, since there is no contamination to disturb the colors.

This Smith-Drum Dyeing Machine holds 280 cheeses of yarn. The entire unit is made from type 316 Stainless Steel, and Stainless spindles hold the yarn.

says

BATES MANUFACTURING COMPANY
BATES BEDSPREAD DIVISION
LEWISTON, MAINE

Bates Manufacturing Company was 100 years old in 1950. The company is the largest manufacturer in the state of Maine; and consumer polls show that Bates is one of the best-known names in cotton piece goods.

Part of this fine record is traceable to Bates' insistence on highest quality, which, in the dyeing department, means bright, clear colors without a speck of stain or rust. The previous dyeing machines were hard to strip. They retained the old color and "killed" the new color. Corrosion and scale caused rust marks on the material.

It's a different story now. The Stainless Steel machines actually *drain* clean. The dense Stainless surface does not retain the old color, and more brilliant colors are the result. Bleaching can now be done right in the dyeing machines, because the corrosive hydrosulfite has no effect on Stainless. The machines have been in use for eight years, working at least two shifts per day, but have required absolutely no maintenance.

No other metal *combines* so many desirable properties as Stainless Steel, especially corrosion resistance, surface denseness, strength, cleanability and easy fabrication. So think of Stainless when you plan—specify USS Stainless when you buy.


UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

**USS STAINLESS STEEL**

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

UNITED STATES STEEL

LUBRIPLATE Lubricants actually condition bearing surfaces and stop progressive wear. They prevent rust and corrosion and resist steam, hot water and many acids. They meet all conditions of the Textile Industry. Use LUBRIPLATE and make One Bearing Outlive Two.

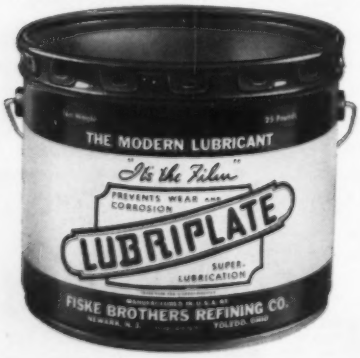
**REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE**

**LUBRIPLATE LUBRICATION**

**MAKES CARS AND TRUCKS RUN BETTER AND LAST LONGER**

LUBRIPLATE H.D.S. MOTOR OIL . . . THE OIL THAT NEEDS NO ADDITIVES

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



## MILL MAINTENANCE

### Glass-Pipe Maintenance Depends on Installation

When glass pipelines are installed and used correctly, maintenance costs are extremely low. Figures for the chemical industry, where operating conditions are extremely severe, show that the annual maintenance cost ranges from 2 to 8% of the total installation cost.

Maintenance of glass pipelines involves:

1. Stocking of spare parts. Generally one spare should be stocked for every 12 pieces of pipe bought. It's important to stock only standard pipe and fittings.

2. Proper storage of spare parts. Keep spare lengths of pipe in wooden racks and store them in protected areas. Keep fittings in boxes and keep the wrappings on the ends of individual pieces. Never pile glass on glass.

3. Provide a stock of metal flange sets and interface gaskets to facilitate quick repairs to lines.

#### Glass Reacts to Heat

When a glass line is heated, the differential expansion between the glass and the supporting structure is much less than for a corresponding steel line. However, the flexibility requirements are greater because the stresses in the glass must be controlled at much lower values.

During and after installation, stresses are set up a glass line. These stresses can be largely controlled within tolerable limits by proper installation. Elbows and joints assure flexibility without inducing excessive stresses.

In some installations, each 10-ft. length of pipe should be supported with a hanger approximately 1 ft. from each end. This arrangement allows the replacement of interface joint gaskets while the pipe is held in place.

Pipe supports are classified in three categories: (1) anchor points, (2) rigid clamp hangers, and (3) guide sleeve hangers.

#### When To Use Anchor Points

An anchor point is a rigid support for a glass line that ties it into the building structure or to fixed equipment such as tanks or independently supported valves in the glass line. There should be only one anchor point in any straight run of pipe.

All valves, strainers, meters, and other heavy equipment tied into a glass line should be supported rigidly and independently. Such supports relieve the weight of the equipment on the glass. Also, when equipment such as valves is operated, the independent and rigid support prevents the transmission of stress to the glass pipeline.

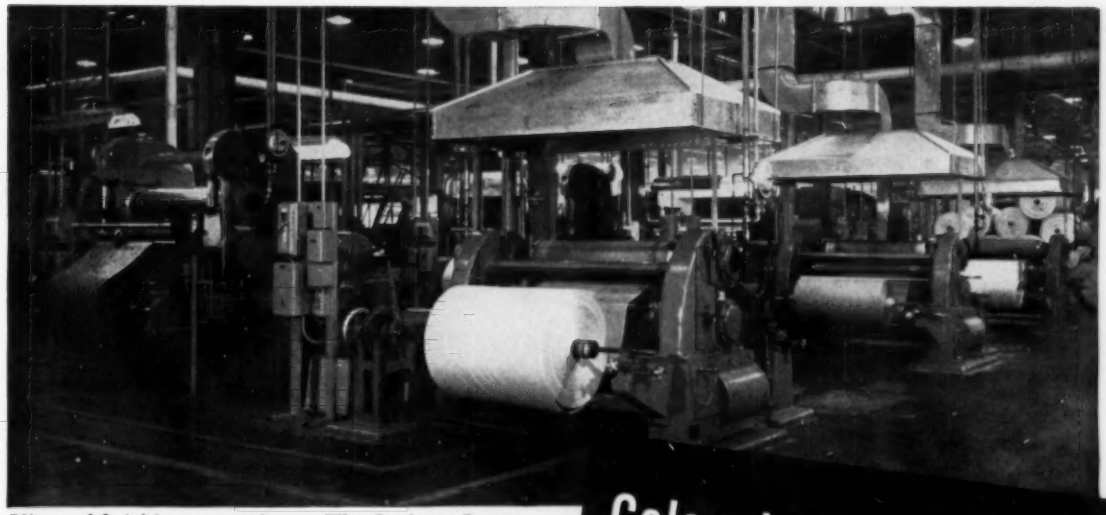
When it is necessary to tie in a glass line to a metal line that must be removed periodically, an adapter fitting is required and should be supported rigidly. Such a support prevents the transmitting of stresses to the glass, which results from the assembly and disassembly of the metal line. Always anchor the metal part, not the glass pipe.

A rigid clamp hanger is used to prevent side sway of glass lines, but it also allows the glass line to expand or contract lengthwise.

When hanger rods are extremely long, side sway of the pipe may be excessive due to water hammer or vibration. In such instances, additional bracing of the hangers is necessary. Long outside lines may be supported from below with a cradle-type rigid clamp support.

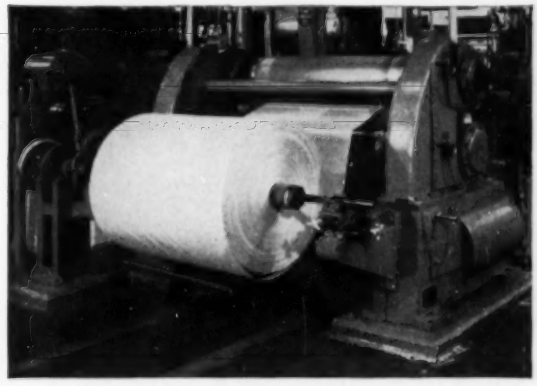
When wall brackets are used to support horizontal pipe, the pipe should not be clamped solid to the bracket except where it is essential to have an anchor point; the pipe may be laid in cradles on the brackets, or it may be suspended by a hanger.

Guide sleeve hangers are used to



View of finishing operation at The Springs Cotton Mills, Grace Bleachery Division showing Appleton Machine Company 20 Ton Embossers and 50 Ton Schreiner Calenders.

# Colonel Elliott Springs Chooses Appleton



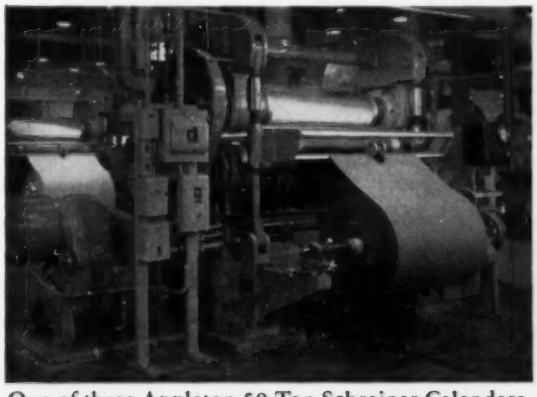
One of three Appleton 20 Ton Embossers in use at The Springs Cotton Mills, Grace Bleachery Division.

The uncommon elegance of Springmaid sheets can be attributed to Colonel Elliott Springs' shrewd judgment of textile machinery.

According to a trade journal article, the famous Springs Cotton Mills owner demands equipment that meets these requirements:

1—It must be modern.
2—It must be well made.
3—It must be the best available.

There never was a better time to invest in efficient equipment. If you would like to own the finest embossers or calenders in the industry, write or call an Appleton representative today. He will gladly analyze your needs, *without obligation.*



One of three Appleton 50 Ton Schreiner Calenders specially adapted for everglaze finishes at Springs Cotton Mills, Grace Bleachery Division.

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

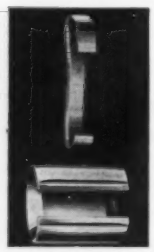


For more data, write this page number on Reader-Service card. →

U. S. RING TRAVELERS

*A "U.S." Service Man is right near you*

When a U. S. Representative visits your mill, he offers a world of useful data in MODERN traveler practice—plus the finest travelers it is possible to produce.



**For your BLENDS try "Bevel Edge"**

The anti-friction design of these travelers gives reduced end breakage, and in other ways helps spin blends more smoothly.

Prompt shipment from Providence & Greenville stocks

*"A Style and Size for Every Textile Fiber!"*

**U. S. RING TRAVELER CO.**

HOME OFFICE & FACTORY: PROVIDENCE, R. I.
SOUTHERN OFFICE & WAREHOUSE: GREENVILLE, S. C.

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**O. B. Land**
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**L. H. Mellor, Jr.**
Mid-Atlantic States, 123 Treaty Rd.
Drexel Hill, Pa.—Phone Hilltop 6-1563

**H. R. Fisher**
Concord, N. H.—Box 83—Phone 2-8930

**H. J. Smith**
Providence—Box 1187—Gaspee 0-0100

support glass pipe so that the line is free to move lengthwise or sidewise.

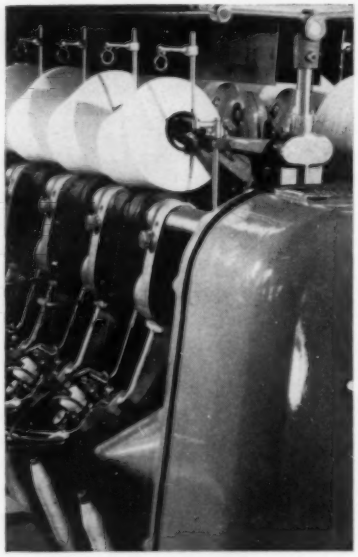
Three basic considerations should be kept in mind when hangers are constructed for glass pipe:

1. Hangers must not clamp the pipe so tight that slight lengthwise movement is impossible.
2. Hangers should be padded with some resilient material such as rubber to prevent scratching the glass pipe.
3. Hangers should be fastened to a rigid structure not subject to radical expansion or contraction to prevent the hangers from sagging and consequently stressing the glass pipe.

The guide sleeve hanger is used to support the line within the maximum recommended span. Always adjust permanent hangers to the pipe—never adjust the pipe to the hangers. Install temporary rope or wire hangers to support glass pipe until permanent hangers are installed. *Corning Glass Works*

## EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 196



### High-Speed Cone Winder

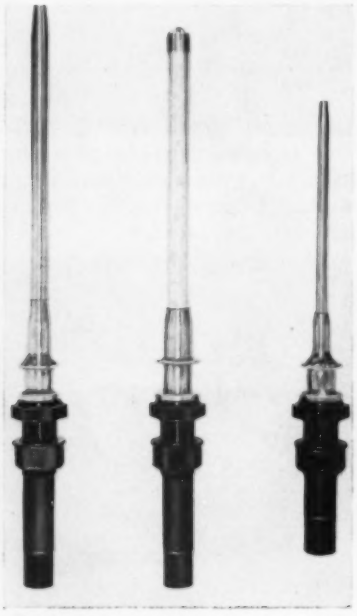
The Model-IKN winder for knitting-yarn cones, built by W. Schlafhorst & Co., Maschinenfabrik, M. Gladbach, Germany, winds at 1,100 yds. per min.

Cones produced are 6 ins. wide and with a gradually increasing taper, which is specially suitable for running off on knitting machines.

The machine winds yarns such as worsted, woolen, cotton, spun rayon, and blends. There is a stepless regulation of the drive, hydraulic package cradle dampers, and automatic yarn threading.

Dust and lint removal is automatic, and there is an improved waxing device.

**Circle T-23 on Reader-Service Card**



### Antifriction Spindles

Roberts Co., Sanford, N. C., is now manufacturing its own antifriction spindles for filling quills, wood warp bobbins, and paper tubes. The company formerly imported spindles for use with its spinning change-overs.

The spindles have smaller-than-conventional whorl diameters that permit a reduction in spindle speeds, reduce power requirements, and increase the life of cylinders, bearings, pulleys, and tapes.

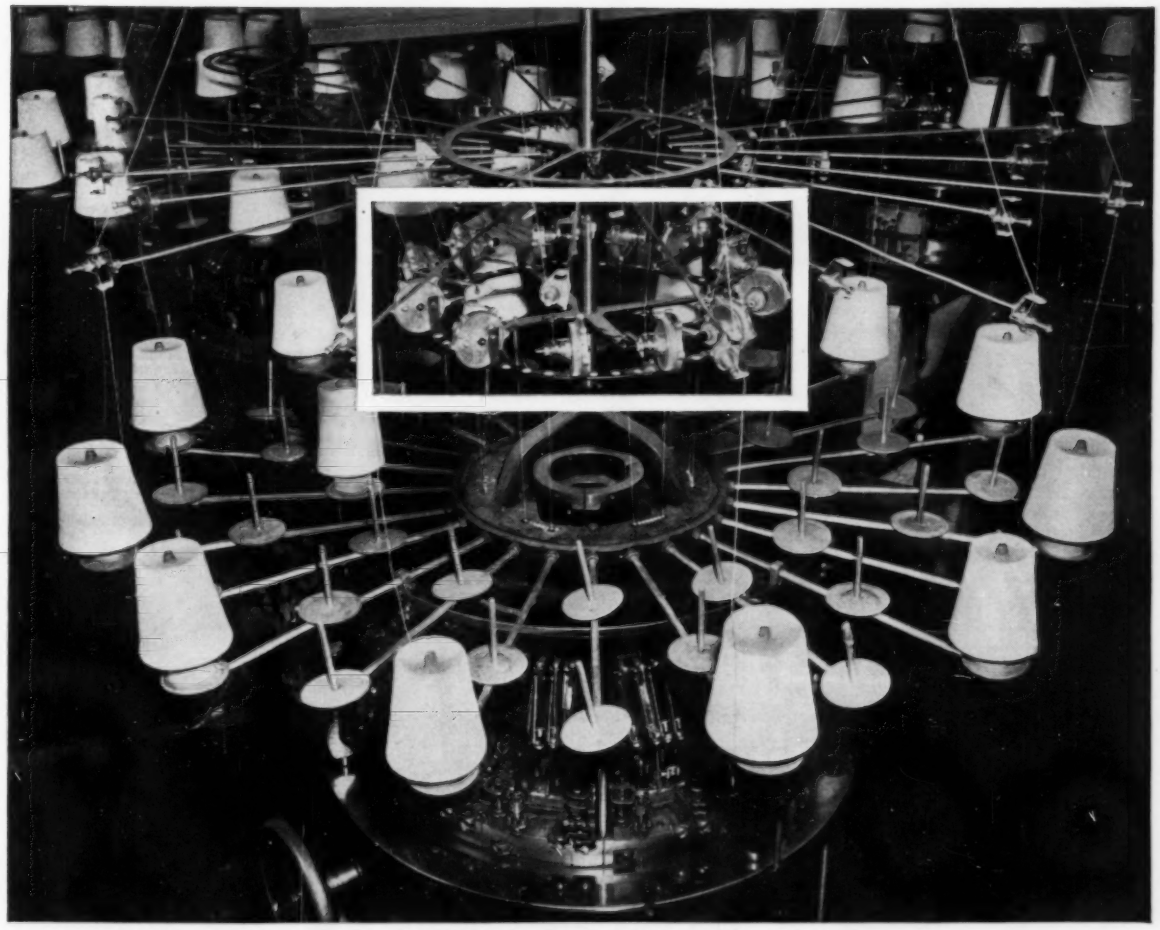
Precision ball bearings in a steel base require only two drops of oil every three to five years. Plumbing is said to be quick and easy.

**Circle T-24 on Reader-Service Card**

### Static-Pressure Indicator

A static-pressure indicator-controller designed to control at a pressure range of 0 to 0.2 ins. of water has been announced by Johnson Service Co., Milwaukee 1, Wis. Called the Model R-1051, the instrument controls dampers and other devices for maintaining static or differential pressures.

**Circle T-25 on Reader-Service Card**



# "ORLON"*–how it's tension-controlled at the Hudson County Knitting Mills

The Hudson County Knitting Mills, who make sweaters of DuPont "Orlon", recently installed Kidde Standard Compensators — one for each yarn feed — on their Jacquard Knitting Machines.

Mr. William A. Zeug of Hudson County Knitting Mills reports, "Since installing these Kidde Compensators we can control fabric widths much more accurately. We have no more uneven stitches due to irregular tension, no more back-winding of cones and less frequent stitch cam adjustment."

Reports like this, while amazing, are not unusual. Because Kidde Compensators, used by more than 500 leading textile mills throughout the nation, cut costs and produce a better product wherever they are installed! They can do the same for *you*. For more information on Kidde Compensators, write Kidde today.

** A DuPont acrylic fibre*

OTHER APPLICATIONS!

Kidde Standard Compensators, installed on Circular Knitting Machines will also solve tension problems in the running of rubber yarns, stretch-type nylon yarns, and most spun and continuous filament synthetic yarns!

**Kidde** (K Kidde)

*The word 'Kidde' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.*

**Walter Kidde & Company, Inc.**



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NEW MANUAL DESCRIBING OVER 4000 TYPES OF

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pay for themselves with what they save you on maintenance

All types of rubber treads—soft, medium and hard—for smooth operation on all kinds of floors. Featuring Neoprene rubber treads - resistant to oxidation, oils and waxes as well as being unaffected by most chemicals - expertly compounded to Darnell standards.

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# CALENDAR

### July

**Gordon Research Conference on Textiles,** Colby Junior College, New London, N. H., July 9 to 13.

### August

**Textile Technology Summer Program,** Massachusetts Institute of Technology, Cambridge, Mass., August 20 to 31.

### September

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 5.

**The Fiber Society, fall meeting,** Warwick Hotel, New York, N. Y., Sept. 6 & 7.

**Perkin Centennial,** Waldorf-Astoria Hotel, New York, N. Y. Sept. 10 to 15.

**AATCC, national convention,** Waldorf-Astoria Hotel, New York, N. Y., Sept. 13 to 15.

**Combed Yarn Spinners Association,** Cavalier Hotel, Virginia Beach, Va., Sept. 27 & 28.

**National Association of Cotton Manufacturers, annual meeting,** Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

**Northern Textile Association, 4th Annual Meeting,** Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

### October

**Southern Textile Exposition,** Textile Hall, Greenville, S. C., Oct. 1 to 5.

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 3.

**Chemical Pnishing Conference,** National Cotton Council of America, Hotel Statler, Washington, D. C., October 3 & 4.

**AATCC, Piedmont Sect., annual meeting,** Charlotte Hotel, Charlotte, N. C., Oct. 6.

**North Carolina Textile Manufacturers Association, annual meeting,** The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

**Textile Operating Executives of Georgia,** A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 13.

**ASTM, Committee D-13, fall meeting,** Warwick Hotel, New York, N. Y., Oct. 16 to 19.

**International Knitting Machinery & Accessories Exhibition,** Granby Halls, Leicester, England, October 17 to 27.

**Southern Textile Methods and Standards Association, fall meeting,** Clemson House, Clemson, S. C., Oct. 18 & 19.

**AATCC, Northern New England Sect.,** Science Park, Boston, Mass., Oct. 19.

**Protective Packaging & Materials Handling Exposition,** Kiel Auditorium, St. Louis, Mo., Oct. 21 to 24.

**Carded Yarn Assn., annual meeting,** Hotel Fort Sumter, Charleston, S. C., Oct. 24 & 25.

**Alabama TOE, fall meeting,** Thach Auditorium, Auburn, Ala., Oct. 27.

### November

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 7.

**AATCC, Western New England Sect.,** Rapp's Restaurant, Shelton, Conn., Nov. 16.

**22nd National Exposition of Power and Mechanical Engineering,** New York Coliseum, New York, N. Y., Nov. 26 to 30.

### December

**AATCC, Northern New England Sect., annual meeting,** Hotel Vendome, Boston, Mass., Dec. 1.

**AATCC, South Central Sect.,** Hotel Patten, Chattanooga, Tenn., Dec. 1.

**AATT,** Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 5.

**AATCC, Southeastern Sect.,** Atlanta, Ga., Dec. 8.

### 1957

### February

**Cotton Research Clinic,** National Cotton Council of America, General Oglethorpe Hotel, Savannah, Ga., Feb. 27 to March 1.

### April

**American Cotton Manufacturers Institute, annual convention,** Palm Beach Biltmore Hotel, Palm Beach, Fla., April 4 to 6, 1957.

**The Underwear Institute, annual meeting,** Hotel Traymore, Atlantic City, N. J., April 29.

**Knitting Arts Exhibition,** Convention Hall, Atlantic City, N. J., April 29 to May 3.

### May

**The Fiber Society, spring meeting,** Clemson House, Clemson, S. C., May 1 & 2.

## NEWS about SUPPLIERS

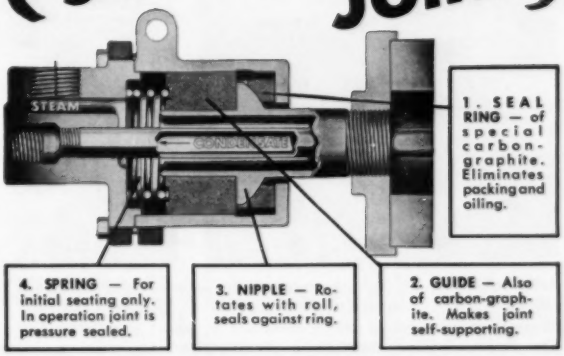
**AMERICAN VISCOSE CORP.**, Philadelphia, Pa.–Has named Harold S. Hart a sales representative in Chicago, Ill. The company has named Burkhart-Schier Chemical Co., Chattanooga, Tenn., as its sole selling agent in 17 states. . . . **CENTURY ELECTRIC CO.**, St. Louis, Mo.–Has named Gunar Moe district manager in the New York, N. Y., office. John B. Heil has been named acting district manager in the Birmingham, Ala., office. . . . **CHEMSTRAND CORP.**, Decatur, Ala.–Has named James B. Lawrence to the Charlotte, N. C., sales staff. The company has closed its Philadelphia, Pa., sales office. . . . **COBBLE BROS. MACHINERY CO.**, Chattanooga, Tenn.

FRANK H. SELLARS (left) has been promoted to supervisor of general chemicals sales for the Dow Chemical Co., Atlanta, Ga., office. WILLIAM B. AMOS (center) has been named a sales technician for Wica Chemicals, Inc., Charlotte, N. C. THOMAS L. STILWELL (right) has been named sales manager of the Textile Machinery Div., Warner & Swasey Co., Cleveland, Ohio.

–Is building a tufted-carpet-making machinery plant in Lancashire, England. . . . **CONTINENTAL CAN CO.**, New York, N. Y.–Has appointed Ralph F. Cox sales representative in the Boston, Mass., area for the Shellmar-Betner Flexible Packaging Div.

**EMKAY CHEMICAL CO.**, Elizabeth, N. J.–Has named H. Russell Haley to the sales staff. . . . **FISCHER & PORTER CO.**, Hatboro, Pa.–Has promoted Philip E. Sellers to vice president in charge of sales. Herman Kockritz has been promoted to field sales manager and William Trethaway has been promoted to district manager of the Atlanta, Ga., office. . . . **FLETCHER WORKS**, Philadelphia, Pa.–Has realigned its sales operation to provide broader servicing throughout the country. Charles Moore is in charge of the operations. The company has opened a retail-type showroom in its factory building. . . . **FOOD MACHINERY & CHEMICAL CORP., BECCO CHEMICAL DIV.**, Buffalo, N. Y.–Has elected Frederick A. Gilbert, president, succeeding Dr. Max E. Bretschger. . . . **GENERAL ANILINE & FILM CORP.**, Antara Chemicals Div.,

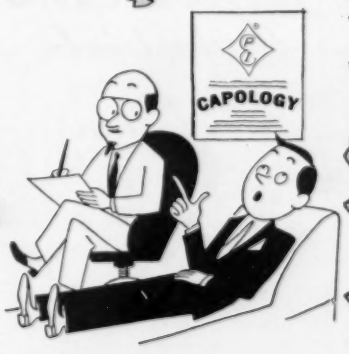

Only 4 internal parts in this self-supporting Johnson Joint


STEAM
1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.
2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.
3. NIPPLE — Rotates with roll, seals against ring.
4. SPRING — For initial seating only. In operation joint is pressure sealed.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

The Johnson Corporation
814 Wood St., Three Rivers, Mich.

Got a Cap Problem ?




Stretch yarn Lively yarns
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For cones, tubes, pirns, bobbins—ANY package
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Gibsonville, North Carolina




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New York, N. Y.–Has named Edwin H. Wolfe assistant manager of the Textile, Leather & Paper Chemicals Dept. . . . **GENERAL STRAPPING CORP.**, New York, N. Y.–Has appointed Mills N. Ripley, vice president. . . . **E. F. HOUGHTON & CO.**, Philadelphia, Pa.–Has appointed Bernard Menin manager of the Textile Sales Dept. . . . **LINCOLN ENGINEERING CO.**, St. Louis, Mo.–Has merged with the McNeil Machine & Engineering Co., Akron, Ohio. . . . **HARRY MILLER CORP.**, Philadelphia, Pa.–Has named Ben Purdy to the sales staff. . . . **ONYX OIL & CHEMICAL CO.**, Jersey City, N. J.–Has placed Leon P. Brick in charge of textile-chemical sales. . . . **READING TESTING LABORATORIES**, Reading, Pa.–Has named A. Lloyd Krum sales representative in the mid-Atlantic states.

**SMITH, DRUM & CO.**, Philadelphia, Pa.–Has announced the retirement of William C. Dodson as sales and development engineer. . . . **STANLEY WORKS, STANLEY STEEL STRAPPING DIV.**, New Britain, Conn.–Has named Theodore A. Day and Henry P. Krogstad sales representatives. . . . **STELLITE AMERICAN CORP.**, New York, N. Y.–Has been appointed United States agent for N. Zivy & Co., S. A., Basel, Switzerland. . . . **JOHN L. STICKLEY CO.**, Charlotte, N. C.

A. L. McARTHUR, III, (left) has been named technical sales representative for Warwick Chemical Co., Greensboro, N. C. SAMUEL A. MOFFITT (center) has been named textile consultant at Mount Hope Machinery Co., Taunton, Mass. GEORGE C. FRYER (right) has been named advertising manager of Pneumafil Corp., Charlotte, N. C.

WILLIAM F. LEINEWEBER, JR. (left) has been elected president of W. D. Dodenhoff Co., Inc., Greenville, S. C. A. V. MOODY (center) has been named vice president in charge of machinery sales and CARL BAKER (right) has been named vice president in charge of industrial sales at Dodenhoff.

*Industrial Revolutions*

Every new invention ushers in new uses and new fields. But the men who produce and distribute these new things are not new. They have merely removed their talents and experiences from old fields. And they suddenly are confronted with problems with which their previous experiences cannot cope.

Credit in a new field is a major problem. It is often rejected when it should have been granted – and vice versa.

Crompton Factoring relieves you of all credit risk, and supplies you with continuous cash for your receivables—a very vital advantage in a new field where all the bugs have not yet been ironed out.

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*The Human Factor*

**CROMPTON-RICHMOND CO., INC.**
1071 Avenue of the Americas, New York 18, N. Y.
**Crompton-Richmond-Joel Hurt Co.**
Glenn Building, Atlanta 1, Georgia

—Has named Robert T. Hess manager of the New York, N. Y., office. Edward W. Ward, Jr., has been named New York and New England sales representative. . . . **STOWE-WOODWARD, INC.**, Newton, Mass.—Has named James Ferrara sales engineer in Ohio, Illinois, and Indiana. . . .

G. W. BOWMAN (left) has been named sales manager of the Hoist Div., Harnischfeger Corp., Cleveland, Ohio. JOHN G. FRISCHKORN (center) has been appointed district sales manager of the Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio. DAVID W. STAPLETON (right) has been elected president of Stowe-Woodward, Inc., Newton, Mass.

**UNION CARBIDE & CARBON CORP.**, New York, N. Y. —Has named Dr. G. H. Law vice president in charge of research and H. M. West manager of the Textile Fibers Dept., Carbide & Carbon Chemicals Co. . . . **UNITED STATES RUBBER CO., NAUGATUCK CHEMICAL DIV.**, New York, N. Y.—Has named James T. Fairclough, Jr., sales representative in Georgia. Robert Dudley has been named to the sales staff in Philadelphia, Pa. . . . **VICKERS, INC.**, Detroit, Mich.—Has named W. F. Driver manager of industrial-products sales. . . . **WARNER & SWASEY CO.**, Cleveland, Ohio—Has moved its Charlotte,

WILLIAM F. LUTHER (left) has formed Lumar Corp., Cleveland, Tenn. Mr. Luther will serve as president of the new concern. ROBERT A. GOPEL (center) has been named assistant sales manager of American Aniline Products, Inc., New York, N. Y. CLINTON F. HEGG (right) has been named general sales manager of L. O. F. Glass Fibers Co., Toledo, Ohio.

N. C., office to 624 Pecan Ave. Herman K. Jennings has been named district manager of the Charlotte office. . . . **YALE & TOWNE MFG. CO., YALE MATERIALS HANDLING DIV.**, Philadelphia, Pa.—Has named S. L. Cooper Co., Washington, D. C., sales representative in Virginia.


# COTTON YARN CONDITIONING ON DYE TUBES AND CONES IN THE "H-W" CONDITIONER

**Conditioned dye tubes assure more uniform cones.**

"H-W" Trademark Reg. U.S. Pat. Off.

"H-W" Trademark Reg. U.S. Pat. Off.

**Conditioned dyed cotton yarn on cones assures smooth running, high loft yarn.**

Our representative will be glad to call at your convenience.

## THE INDUSTRIAL DRYER CORPORATION

STAMFORD, CONNECTICUT

SALES REPRESENTATIVES IN KEY TEXTILE AREAS

Huyck's *new* *Pre-conditioned*
COMPRESSIVE SHRINKAGE BLANKETS

- REDUCE BREAK-IN TIME
- LAST LONGER
- MINIMIZE COSTLY REPROCESSING
- ASSURE SMOOTH FINISH
- HOLD TO SPECIFIED DIMENSIONS
- REQUIRE FEWER MACHINE ADJUSTMENTS

*Discuss your specific requirements with your Huyck Sales and Service Engineers.*

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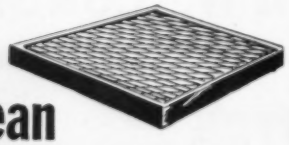
KENWOOD TEXTILE PRODUCTS

*FIRST IN QUALITY . . . FIRST IN SERVICE*

**Established 1870 • Rensselaer, New York**

**Air Filters Soaked Clean in only TEN minutes!**



"Why, they look like new!" exclaimed the plant superintendent when he examined six air filters that the Oakite Man had just reconditioned. It was a striking demonstration indeed! Before cleaning, the filters had been covered with a clinging, clogging mess of oil, dirt, dust, and cinders. The Oakite Man had merely immersed the filters in a boiling solution of Oakite Composition No. 22 and hose rinsed. Every bit of oil and grime had been completely removed from all six filters—and the entire process had taken only ten minutes! —Another sample of why it pays to consult Oakite first. For more details, call or write Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

**OAKITE**

MATERIALS • METHODS • SERVICE

*Technical Service Representatives in Principal Cities of U. S. & Canada*

## NEWS about MILLS

### COTTON MILLS

**Abney Mills,** Greenwood, S. C., is building a 150,000-sq.-ft. warehouse. The one-story, concrete building will have a storage capacity of 40,000 bales of cotton and rayon.

**American Thread Co.,** Clover, S. C., will install 24 deliveries of Whitin Even-Draft drawing.

**Ball Thread Co. Ltd.,** Montreal, Que., is building a one-story office building. The cinder-block and brick building will cost $30,000.

**Berkshire Hathaway, Inc.,** Fall River, Mass., is installing Whitin Axi-Feed on the blending feeders and Model B Axi-Flo in the opening room.

**Burlington Industries,** Cramerton Plant, Cramerton, N. C., will install three Saco-Lowell Model 56 combers.

**Carlton Yarn Mills,** Cartex Div., Salisbury, N. C., is converting 14,944 spindles to Whitin Super-Draft.

**Cotton Blossom Corp.,** a subsidiary of Deering, Milliken & Co., Inc., Spartanburg, S. C., is building a $500,000 cotton warehouse. The 125,000-sq.-ft. building will be used to facilitate cotton handling for Deering, Milliken's 25 Southern plants.

**Cowikee Mills,** Eufala, Ala., will install 10 Whitin Hi-Pro 12x6½x10-in. long-draft roving frames, 80 spindles each. The company plans to install six in the No. 1 mill and four in the No. 3 mill.

**Deering, Milliken & Co.,** New York, N. Y., has ordered Dixon saddle guides for 112,564 spindles of Roth and Duo-Roth spinning. The guides will be installed at the company's Hartsville, S. C., and Gainesville, Ga., plants. The company has also ordered 204 sets of Pneumastop that will be installed in 12 of its mills.

**Erwin Mills, Inc.,** Durham, N. C., has ordered 78 Whitin Superflex spinning frames, 300 spindles each, with 3½-in. gauge, 2¼-in. ring, and 9-in. traverse for installation in its No. 4 mill. The mill has also ordered nine Whitin Hi-Pro roving frames, regular draft, 12x6½x10 in. In the No. 1 mill, Whitin T-3 Super-Draft has been installed on 36 spinning frames.

**Gaffney Mfg. Co.,** Gaffney, S. C., is installing 200 used Draper Model E looms in its mill.

**Groves Thread Co.,** Gastonia, N. C., will spend $500,000 to modernize its twisters. The company has placed an order with Whitin Machine Works for 45 twisters.

**Hamilton Cotton Co. Ltd.,** Hamilton, Ont., has purchased the building formerly occupied by Canadian Cottons Ltd., Marysville, N. B. The building will be remodeled and new equipment will be installed.

**Jordan Mills,** Columbus, Ga., is building a 22,000-sq.-ft. addition to the weave room. The cost will be $112,000. Provision is being made for the addition of a second story at a later date.

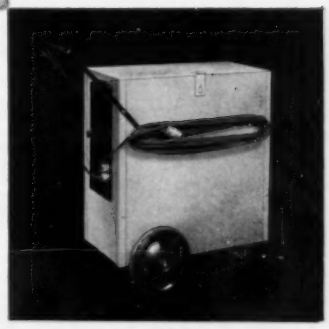
**Kendall Co.,** Walpole, Mass., will locate its New York office on the 24th floor of the new building now being built at 111 W. 40th St. Three Ross predryers for cotton sheeting have been ordered for the Bethune, S. C., plant. Lim-

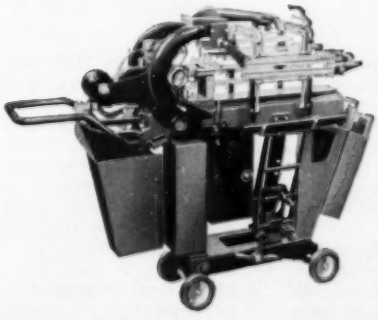
# BARBER-COLMAN

SERIES "M" MODELS NOW MADE IN **10** SIZES
FROM 36" TO 126" BY 10" VARIATIONS

## PORTABLE *Warp-Tying Machines* FOR ALL PURPOSES

The BARBER-COLMAN line of warp-tying machines has now been extended to cover practically every conceivable application. As noted above, the Type "M" machines are now available in *ten* sizes. These machines tie the *full width* of the warp in one operation, work directly in back of the loom, and are made in several types to tie-in cotton, spun yarns, filaments, wool, worsteds, or synthetic yarns from a flat sheet or from an end-and-end lease. When using a Type "M" Warp-Tying Machine, none of the weaving elements need be removed nor any of the loom settings disturbed. The picture at the right shows the special cart used for protecting the Knotter Unit when not in use and for carrying it from one frame to another when two or more are employed. This carrier also contains the variable speed-controller for the Knotter Unit. These machines are probably the most versatile available for most mill conditions.





## IMPROVED SERIES "L" MODELS IDEAL FOR CERTAIN CONDITIONS

BARBER-COLMAN Model "L" machines are familiar to two generations or more of mill people, because they have been on the scene in one form or another for 45 years. The latest designs, one of which is shown here, have many up-to-date improvements which distinguish not only their appearance but also their operation and efficiency. These compact, versatile, and easily-moved machines have many important applications in both large and small mills. Barber-Colman representatives are thoroughly versed in the usefulness and applicability of both Model "L" and Model "M" machines, and can be consulted with confidence as to which might suit a given situation best. Also, it is important to know that all users of Barber-Colman machines are served promptly and skilfully by an alert service group of wide experience.

**AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES**

**BARBER-COLMAN COMPANY**

ROCKFORD • ILLINOIS • U. S. A.

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| Batliboi & Company<br>Forbes Street, Fort<br>Bombay, India | J. Rabasa<br>Isabel la Catolica 45-913<br>Apartado 7348<br>Mexico D.F., Mexico | Quimamil S.A. Anilinas<br>e Representacoes<br>Rua Glicerio 537 547<br>Caixa 5658 e 3431<br>Sao Paulo, Brazil | Do-Yei Shoji Kabushiki Kaisha<br>No. 7 Awajimchi<br>1-Chome Higashi-ku<br>Osaka, Japan | Associated Agencies (M'cr.) Ltd.<br>Piccadilly House<br>11 Piccadilly<br>Manchester 1, England | Associated Agencies (M'cr.) Ltd.<br>27 Kothari Building<br>Napier Road<br>Karachi 2, Pakistan |



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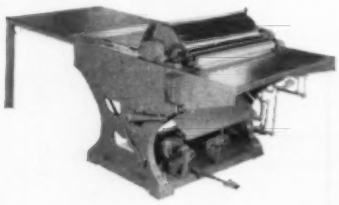
# UTICA Rotary Press

**FOR:**

- Tee Shirts
- Knitted Athletic Shirts
- Jockey Shorts
- Kiddies' Panties
- and other knitted garments



**PRODUCTION:** One operator—400 dozen athletic shirts in 8 hours.

FEATURES OF THE UTICA ROTARY PRESS—

Garments are steamed top and bottom, go through on a conveyor belt under large heated roll which sets on heated buck over a second heated roll, and come out the back to the folding table. Goods can be put through flat or folded. Pressure on big roll can be adjusted for different thicknesses. This press has variable speed drive . . . works with foot pedal for instant stopping. Comes equipped with switch and motor, and all necessary piping, traps, and check valves . . . completely assembled, ready to go to work. For further information on how this Rotary Press can do your pressing of knitted garments economically and efficiently, write today.

**UTICA Novelty and Mill Specialty Company**

2145 Dwyer Ave., Utica 2, New York

*Builders of Textile Machines Since 1903*



# MODEL 8-D-1

## PORTABLE ROTARY WITH MOTOR DRIVE

No exposed gears. Self lubricated gear reduction unit. Chain drive to *Merrow Butted Seaming Head* or *Dinsmore Single Chain Stitch Head.* Automatic cloth stripper. Wide range of stitch requirements.

**DINSMORE MANUFACTURING CO.**

BOX 267 SALEM, MASS.


## NEWS ABOUT MILLS Continued

ited production has been started in the Bethune mill and full production is expected the first of next year.

**Lockwood-Duchess, Inc.,** Waterville, Me., has been purchased by Deering, Milliken & Co., New York, N. Y.

**M. Lowenstein & Sons Co.,** New York, N. Y., will build a $500,000 warehouse in Anderson, S. C. The 113,000-sq.-ft. warehouse will be the center of cotton activities for the Lowenstein mills.

**Maverick Mills,** White Horse Mill, Greenville, S. C., is installing 18 Whitin spinning frames with 3-in. gauge and 1⅞-in. ring.

**North Carolina Finishing Co.,** Alexander Mills Div., Forest City, N. C., has ordered six 12x6¼x10-in. Whitin Hi-Pro long-draft roving frames and Whitin Super-Draft for 79 spinning frames.

**Patchogue-Plymouth Mills Corp.,** Hazelhurst, Ga., has installed 24 new automatic looms.

**Rhodes-Rhyne Mfg. Co.,** Lincolnton, N. C., will install 56 Draper looms as part of its expansion program. New spinning and cleaning equipment will also be installed.

**Springs Cotton Mills,** Lancaster, S. C., is building a 70,000-sq.-ft. addition to its plant. About 1,200 looms will be installed when the addition is completed.

**Troutman Spinning Co.,** Troutman, N. C., has been organized to spin cotton and other fibers.

**Wabasso Cotton Co. Ltd.,** Grand'Mere, Que., plans to build a $200,000 addition to its mill.

**J. W. Wood Elastic Web Co.,** Stoughton, Mass., will build a $250,000 plant in Shelby, N. C.

**Woodside Mills,** Liberty Plant, Liberty S. C., will install 16 Whitin Superflex frames with 3½-in. gauge, 8½-in. traverse, and 1⅞-in. ring. All the frames will be equipped with Pneumafil.

### WOOLEN AND WORSTED MILLS

**Albany Felt Co.,** St. Stephen, S. C., has started partial operations in its new $2,000,000 mill. The mill is expected to be in full production this fall.

**Deering, Milliken & Co.,** New York, N. Y., has purchased the Princeton Worsted Mill, Kingstree, S. C.

**Milledgeville Mills,** a division of J. P. Stevens & Co., Milledgeville, Ga., will add 70,000 sq. ft. to its plant. Dyeing and finishing operations will be installed. Operations at the Dublin, Ga., plant will not be affected by this integration.

**Portland Woolen Mills, Inc.,** Portland, Ore., is building a new wool-scouring plant and a warehouse. The one-story building will contain 36,000 sq. ft. of floor space. The scouring plant will be equipped to handle 100,000 lbs. of grease wool per week. The total cost will be $123,000.

**Stokes Bros. Worsted Co.,** West Warwick, R. I., has installed 48 new looms and new winding and dressing equipment in its new mill.

### SYNTHETICS MILLS

**Abbeville Mills Corp.,** Abbeville, S. C., is building a $150,000 addition to its present mill building.

## KNITTING MILLS

**Alabama Hosiery Mills, Inc.,** a unit of Mojud Hosiery Co., Decatur, Ala., has ceased operations. Mojud has been purchased by Charles Roth Co., and all production will be concentrated in Greensboro, N. C.

**Amos & Smith Hosiery Co.,** Pilot Mountain, N. C., is installing 120 Scott & Williams seamless machines for the production of women's hosiery. An addition will be made to the building in the future.

**Bassett-Walker Knitting Co.,** Bassett, Va., will build an $80,000 addition. The three-story building will contain 50,000 sq. ft.

**Carolina Hosiery Mills, Inc.,** Burlington, N. C., has been organized with a capital stock of $100,000.

**Danita Hosiery Mfg. Co., Inc.,** Philadelphia, Pa., will merge all its subsidiaries into one corporation.

**Fantashere, Inc.,** Buffalo, N. Y., is installing 30 machines for the production of seamless hosiery as part of a $100,000 expansion program.

**Infants Socks, Inc.,** Reading, Pa., will close its plant in Reading and consolidate production at Fond du Lac, Wis., and Eufaula, Ala.

**Melrose Hosiery Mills,** High Point, N. C., is installing 34 400-needle women's seamless knitting machines in its mill that were purchased from Lillian Knitting Mills, Albemarle, N. C.

**Paco Knitting Mills,** Chattanooga, Tenn., is building an addition to its present building that will add 4,000 sq. ft. to its manufacturing area.

**Pagoda Knitting Mills,** Reading, Pa., is building a two-story adidtion to its present plant. The cost will be about $12,000.

**Pons Full Fashion Mills,** Valdese, N. C., has converted its operations from hosiery to sweater production.

**Rome Hosiery Mills,** Rome, Ga., has discontinued operations. The property will be sold.

**Standard Knitting Mills,** Knoxville, Tenn., plans to spend $200,000 for new machinery.

**Wayne Knitting Mill,** Fort Wayne, Ind., will build a $125,000 mill in Kosciusko, Miss. The building will contain 20,000 sq. ft. of floor space. The company plans to be in full operation by December.

## DYEING AND FINISHING PLANTS

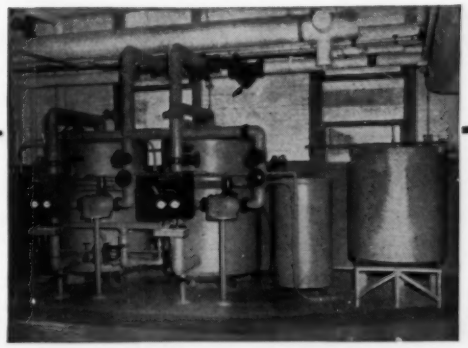
**Clarksville Finishing Plant,** Clarksville, Va., has been purchased by Pacific Mills, Boston, Mass.

**Fairlawn Finishing Co.,** Paterson, N. J., has installed 12 Morrison 60-in. jigs in its new 2,000-sq.-ft. addition. Orders have been placed for a new Rodney Hunt scouring machine and additional Morrison drying equipment.

**Pioneer Valley Finishing Corp.,** Holyoke, Mass., has been organized to dye, finish, and process textiles. About $170,000 worth of machinery will be installed in a 22,000-sq.-ft. area of the former Farr Alpaca mill.

**Sayles Finishing Plants, Inc.,** Saylesville, R. I., has been licensed by Joseph Bancroft & Sons, Wilmington, Del., to use the Everglaze and Minicare trademarks.

**Tow Dyeing Corp.,** Philadelphia, Pa., has been organized to produce tow-dyed Orlon for the knitted outerwear trade.

INVERSAND WATER SOFTENER PLANT

Producing

CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
CLAYTON 9 NEW JERSEY

COOL any building from the ROOF

*effectively, efficiently, economically*

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. Even with insulation, this imposes a big load on air conditioning.

Roof cooling is the answer. It can be used on any roof to keep the building cooler and save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed within a few hours by your maintenance department, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

RUPPRIGHT'S ROTARY ROOF COOLER
Box 6795-TW, Los Angeles 22, Cal.

INSTALLED WITHIN A FEW HOURS

CALDWELL TANKS—
First Choice of the Textile Industry!

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

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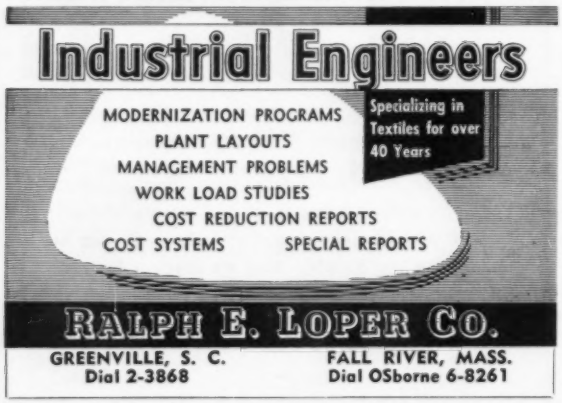
slats • picker teeth • lags
plain or pinned.
PLAIN AND SPIKED FEED BOX
aprons
pins • rolls
cylinders • tenter plates
plain or pinned.
GARNETT AND FLOOR CONVEYOR APRONS
ENGINEERING AND CONSULTING SERVICES ON PICKING AND COARSE CARDING APPLICATIONS
ROBERT A. MAIN & SONS, INC.
Manufacturers
268 PASCACK ROAD PARAMUS NEW JERSEY



The Kuljian Corporation
RAYON PLANTS & TEXTILE MILLS
KULJIAN
• DESIGN
• CONSTRUCTION
• MANAGEMENT
1200 N. BROAD ST., PHILA. 21, PA.
MEXICO CITY • CARACAS • MADRID •
ROME • ATHENS • TOKYO • CALCUTTA

CREATED FOR THE TEXTILE INDUSTRY
the DUROMETER
FOR TESTING WINDING DENSITY
Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.
Write today for bulletin R-8
Shore
INSTRUMENT & MFG. COMPANY, INC.
90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N.Y.

**Carl Alexander** has been elected secretary of Corriher Mills Co., Landis, N. C.

**David Allen** has been named overseer of carding at Amoskeag-Lawrence Mills, Manchester, N. H.

**Charles L. Amos** has been named to handle the seamless production operations at Melrose Hosiery Mills, Inc., High Point, N. C.

**Leonard Ballard** has been named vice president of Lebanon Woolen Mills, Lebanon, Tenn.

**Ullman Benedict** has been named manager of the Atlanta, Ga., warehouse of James Lees & Sons Co.

**David Berdon** has been elected chairman of the board of Sidney Blumenthal & Co., New York, N. Y.

**Bert I. Bertelsen** has been named vice president in charge of manufacturing at Drycor Felt Co., Staffordville, Conn.

**Andre Blumenthal** has been named vice chairman and treasurer of Sidney Blumenthal & Co., New York, N. Y.

**Albert E. Bowman** has been promoted to general overseer of carding and padding at Aragon Mills, Aragon, Ga.

**John W. Bowman** has been named president of Berkshire Knitting Mills, Reading, Pa.

**William J. Bowman** has been promoted to plant superintendent at the Asheboro Hosiery Finishing Plant, Burlington Mills Corp., Asheboro, N. C.

**George Burpee** has been named plant superintendent at the Bridgeport, Pa., plant of James Lees & Sons Co.

GEORGE W. PFEIFFENBERGER has been named executive vice president of Plains Cotton Growers, Inc., Lubbock, Texas. He was formerly with the National Cotton Council.

**Philip Byfield** has been named manager of Cowan Mill, Lewiston, Me.

**Max Caldwell** has been named overseer of carding at Dresden Mills, Dresden, Ohio.

**O. C. Clark** has been promoted to assistant division manager of the Asheboro Hosiery Finishing Plant, Burlington Mills Corp., Asheboro, N. C.

**Donald Comer, Jr.**, has been elected president and treasurer of Cowikee Mills, Eufaula, Ala.

**J. Fred Corriher** has been elected president of Corriher Mills Co., Landis, N. C.

**Harvey H. Crawford** has been named third-shift supervisor of weaving at Aragon Mills, Aragon, Ga.

**Paul M. Dekoning** has been elected president and general manager of Jantzen, Inc., Portland, Ore.

**A. L. Denton** has returned as overseer of carding at Lewisburg Mills, Lewisburg, Pa.

**Thomas Dever** has been named night superintendent of Palmetto Worsted Mills, Laurens, S. C.

**Lane C. Dry,** has been promoted to general superintendent of Corriher Mills Co., Landis, N. C.

**P. K. Dry** has been elected vice president in charge of manufacturing at Corriher Mills, Landis, N. C.

**Norman B. Fidler** has been promoted to order-planning supervisor at the Asheboro Hosiery Finishing Plant, Burlington Mills Corp., Asheboro, N. C.

**Jerry Frisch** has been elected president of H. E. Frisch Knitting Mills Co., Cleveland, Ohio.

**Marc Frisch** has been elected vice president of H. E. Frisch Knitting Mills Co., Cleveland, Ohio. He will continue as secretary.

**Charles Hagberg** has been promoted to master mechanic at Wyandotte Worsted Mills, Central Village, Conn.

**Jack Harris** has been named superintendent of the Pelzer-Upper Plant of Kendall Mills Co., Pelzer, S. C.

**Larry Higgins** has been named superintendent of Burlington Industries, Randleman, N. C.

**C. E. Innan** has been named vice president in charge of manufacturing at Jantzen, Inc., Portland, Ore.

**Ernest Jackson** has been named superintendent of Alexander Wool Combing Co., Lowell, Mass.

**William J. Jarrett** has been named general manager of Rabun Mills, a division of James Lees & Sons Co., Rabun Gap., Ga.

**Fred I. Kent, II,** has been named assistant production manager of Exeter Mfg. Co., Exeter, N. Y.

**John F. Kline** has been named overseer of dyeing, second shift, at Wm. Barnet & Sons, Rensselaer, N. Y.

**Merle Littlefield** has been named overseer of dyeing, second shift, at Eastland Woolen Mills, Corinna, Me.

**George Lodge** has been named overseer of finishing at Fonda Glove Lining Co., Fonda, N. Y.

**Jack Maslin** has been named production manager at Slingsby Mfg. Co., Brantford, Ont.

ERNEST D. LOKERSON (left) has been named chief engineer at A. M. Karagheusian, Inc., New York, N. Y. DOUGLAS H. McELHINNEY, (right) has been named director of research for the company.


*Increasing the* **SAFETY** *of workers in*
More than 4,000
Industrial and
Commercial companies
(including the largest;
list of users on request)

**VISION *Screening* TESTS**

that take *only 3 to 4 minutes*

**44% fewer accidents** are reported by plant managers, after installing these tests to make sure that each employee's eyes are working efficiently TOGETHER. Also—

20% reduction in spoilage . . . 14% increase in production.

These employers have found the **NO plant can afford workers with UNHAPPY EYES.** 30% to 40% of employees have visual problems.

KEYSTONE VIEW CO., Meadville, Pa. Originators of Binocular Vision Tests for Industry.

KEYSTONE VIEW CO., MEADVILLE, PA.
Send booklet telling WHAT PLANTS HAVE ACCOMPLISHED WITH VISION SCREENING.

(Name) .....

(Company) ..... (City).....

**The Great**
**"EQUALIZER"**

In the old west, a Colt revolver was known as the "great equalizer." Today, it is your vote.

When you step into the voting booth, you enter the one place in the world where all men are truly equal. Your secret vote carries the same weight and counts exactly as much as that of the mightiest person in the U.S.A.

***See you at the polls!***

*Published as a public service in cooperation with The Advertising Council*

**R. John May** has been named manager of the new Los Angeles, Calif., warehouse of James Lees & Sons Co.

**Royce McCaughey** has been named overseer of dyeing and finishing at Massachusetts Mohair Plush Co., Lowell, Mass.

**August Meade** has been named assistant treasurer of Wauregan Mills, Wauregan, Conn.

**Lawrence Melius** has been named production manager at High Rock Mills, Philmont, N. Y.

**Rudolph Meuser** has been named manager of the finishing department at Forstmann Woolen Co., Passaic, N. J.

**Harry L. Morgan** has been named plant superintendent at James Lees & Sons Co., Bridgeport, Pa.

**John Morgan** has been named manager of Robbins Mills, Raeford, N. C.

**David Morgenstern** has resigned as president of Pellon Corp., New York, N. Y. Mr. Morgenstern will head his own concern, to be known as Fabrics Development Corp.

**Cleo Noles** has been promoted to overseer of carpet sewing at Callaway Mills, Valway Plant, LaGrange, Ga.

**Robert C. Pickens** has been promoted to vice president in charge of production at Portland Woolen Mills, Portland, Ore.

**Louis F. Prossen** has been named manager of the Manufacturing Dept., Textile Div., Celanese Corp. of America, New York, N. Y.

**J. O. Roberts** has been named superintendent of Kingstree Mfg. Co., Kingstree, S. C., formerly Princeton Worsted Mills.

**Buford Robbins** has been named superintendent of Chronicle Mills, Belmont, N. C.

**Graydon Robinson** has been promoted to vice president of Lebanon Woolen Mills, Lebanon, Tenn.

**Howard Rollins** has been named to head all manufacturing operations for Dover Mills, Shelby, N. C.

**Phillip M. Russell** has been named manager of Burlington Hosiery Co., Half Hose Div., Asheboro, N. C.

**Charles W. Sanford** has been named superintendent of D. E. Rhyne Mills, Inc., Lincolnton, N. C.

**Henry J. Sartrys** has been named overseer of weaving for Collins & Aikman Corp., Bristol, R. I.

**Richard Seifert** has been named manager of Belmont Yarn Mills, Woonsocket, R. I.

**Vernard Smith** has temporarily assumed the duties of treasurer of Jordan Mills, Columbus, Ga.

**Wade Stout** has been named superintendent of Burlington Industries, Wadesboro, N. C.

**Richard H. Swallow** has been named plant manager of Belton Yarn Mill, Belton, S. C.

**J. B. Talbert** has been named general overseer of the worsted department of Rhyne-Houser Mfg. Co. Cherryville, N. C.

**Allen Vincent** has been named overseer of carding at A. D. Ellis Mills, Monson, Mass.

**Arthur Wiesner** has been named manager of both Cowan Mill, Lewiston, and Farnsworth Mill, Lisbon Centre, Me.

**Edgar L. Woods** has been named superintendent of Valdese Mfg. Co., Valdese, N. C.

**Ray Woods** has been promoted to overseer at A. D. Ellis Mills, Monson, Mass.

# OBITUARY

**Henry J. Bood**, owner of Cranston Braid Co., Cranston, R. I.

**Charles S. Bromley, Jr.**, 50, president of Quaker Lace Co., Philadelphia, Pa.

**Bernard M. Cone**, 81, retired chairman of the board of Cone Mills Corp., Greensboro, N. C.

**John J. Dinneen**, 77, retired resident manager of Utica Knitting Mills, Utica, N. Y.

**Joseph B. Ely**, 75, former president of American Woolen Co., New York, N. Y.

**William Futekunst**, 49, head of the dyeing operation of Interwoven Stocking Co., Martinsburg, Va.

**Grady G. Giles**, 56, superintendent of Durand Hosiery Mills, Chattanooga, Tenn.

**Walter C. Giles**, 62, chief plant engineer at American Viscose Corp., Marcus Hook, Pa.

**Maurice O. Guerin**, 54, president of River Mills Corp., Fall River, Mass.

**Romie L. Hill, Sr.**, 68, president of Lee Hosiery Mills, Inc., Thomasville, N. C.

**J. P. Lawrence**, one of the founders and chairman of the board of American MonoRail Co., Cleveland, Ohio.

**Miss Lois A. McAfee**, 59, secretary-treasurer of Mac Hosiery Mill, Granite Falls, N. C.

**Henry J. Murphy**, retired director of the manufacturing and research department of Bibb Mfg. Co., Columbus, Ga.

**Fred C. Odell**, 75, president of J. M. Odell Mfg. Co., Bynum, N. C., and secretary of Kerr Bleaching & Finishing Works, Concord, N. C.

**Dominick Piscitello**, 65, president of Reforso Knit Goods Co., Jersey City, N. J.

**Scott Roberts**, 77, president and chairman of the board of Adelaide Mills, Anniston, Ala., and vice president of Classe Ribbon Works, Anniston.

**Joseph A. Simpson**, 67, founder and owner of Columbia Silk Throwing Co., Bloomsburg, Pa.

**George E. Spofford, Sr.**, 86, former general manager and treasurer of Bates Mfg. Co., Lewiston, Me.

**Mrs. Florence R. Struthers**, 68, a director of Strutwear, Inc., Minneapolis, Minn.

**Richard Thomson**, 92, one of the founders of Mercury Mills Ltd., Hamilton, Ont.

**Harold Tyson**, 60, foreman for W. E. Hulton Dyeing Co., Philadelphia, Pa.

**William C. Wengert**, 65, foreman at Gilbert Knitting Co., Little Falls, N. Y.

**Theodore L. H. Wilde**, 70, former president of American Hair & Felt Co., Chicago, Ill.

**Robert C. Williams**, 70, retired general manager of Virginia Woolen Co., Winchester, Va.

# If you're not in the book *you're a man without*

. . . . . a country
. . . . . a state
. . . . . a county
. . . . . a town
. . . . . a party
. . . . . a street
. . . . . a school
. . . . . a *vote*

Look at all the things you can lose, if you're not a registered voter.

If you're not in the book, you lock yourself out of the elections. The polls are closed to you. You can't vote on streets, or schools, councilman or mayor (not to mention congressman, senator or president). You don't even have the right to *complain* about your government and the way things are run!

But more than that, you cut yourself apart from your neighbor next door, your friends at the shop, your fellow members in union or club.

You lose the right to look that boy of yours in the eye when he wants to know if you're doing your part.

And you lose the self-respect that comes from knowing you can walk into the polls on Election Day—the one place in the world where all free men are really equal. Isn't it too much to risk for the little time that registering takes?

Get your name in the book
—and do it now!

## *Is your name in the book?*

# EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities — executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

**DISPLAYED** ——RATES—— **UNDISPLAYED**

The advertising rate is $17.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

**An advertising inch** is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

**$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.**
**Position Wanted—½ the above rate.**
**Box Numbers**—counts as 1 line.
**Discount of 10%** if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS or inquiries to Classified Division TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y. for August issue closing July 13th

## POSITIONS OPEN

**WE CAN PLACE**—Worsted yarn mill mgr.; sweater mill mgr.; garment factory supt.; cot. mill supt. combed yarns, synthetics; asst. mgr. piece goods bleachery; asst. labor relations mgr.; pile fab. designer; worsted-rayon designer (Canada); supervisor cloth spong. and examining.

**OVERSEERS FOR**—cot.-rayon piece goods dye.; raw stock and top dye.; win. spin.; tape and ribbon dyeing; velvet dye. and fin.; wstd. comb.; wstd. spin., twist., wind. and reeling; win. weav.; win., wstd. and felt finish.; napping.

**SECOND HANDS FOR**—cot. slash.; win. dye.; win. card.; cot. weav.; win. mule and frame spin.

**MASTER MECHANICS**, plant engineers; designers and draftsmen; steam power supt.; asst. mech. supt. $7,000-$8,000; chemists and laboratory men with tex. and rubber experience; color matcher; time study-industrial engineers; technician (tex. schl. grad., N. Y. City).

**KNIT. MACH. FIXERS** (several); picker fixer-erector; finished goods perchers, examiners, also head percher; win. dresser tender; jacq. loom fixer; garnett foremen-fixers; garnett salesman; win. card fixer; sewing mach. fixer; sewing supervisor; shear tender.

**SEND US YOUR RESUME.** Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

**CHARLES P. RAYMOND SERVICE, Inc.**
294 Washington St. Boston 8, Mass.
Phone: LIberty 2-6547
Over 55 Years In Business

## MECHANICAL ENGINEERS FOR TEXTILE RESEARCH

**A major producer of non-woven fabrics needs 3 young engineers for research work in a new laboratory near New Brunswick, New Jersey.**

**THE FIELDS WILL BE:**
**PILOT PLANT SUPERVISION**
**PROJECT ENGINEERING**
**GENERAL RESEARCH ENGINEERING**

**The size of the research division is small so that careful attention can be given to the professional development of each engineer.**

A degree in mechanical engineering required.
**POSITIONS AVAILABLE BOTH FOR RECENT GRADUATES AND MEN WITH UP TO 8 YEARS EXPERIENCE.**
Background does not have to be in research or textiles.

**LIVING CONDITIONS IN THE AREA ARE DESIRABLE.**
**Excellent schools are available and many recreational areas are near by.**
**PLEASE SEND RESUME AND SALARY REQUIREMENTS TO:**
P-1962, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

## TEXTILE ENGINEERS
## INDUSTRIAL ENGINEERS

Synthetic fiber experience desirable for Textile Engineers to assist with process and supervisory problems in manufacture of nylon.

Industrial Engineers with textile experience or Textile graduate with Industrial Engineering experience for Production Department planning.

Permanent positions offering excellent future in new Nylon project. Complete benefit plans, excellent working conditions, and new opportunity. Plant location is one mile north of Hopewell, off State Route 10.

NATIONAL ANILINE DIVISION
**Allied Chemical & Dye Corporation**
**P.O. Box 831, Hopewell, Virginia**

Unusual opportunity with Celanese in lovely Charlotte, North Carolina, for an applications development engineer, age 25 to 35. It requires a BS in Chemistry or Chemical Engineering (higher degree preferred) with 1 to 5 years experience.

Duties will be to aid in the development of new and improved non-woven applications and end products from present and future Celanese fibers, including collaboration with members of other areas in the applications and product development department, marketing department and customers of the Textile Division. The man selected will have the authority to act, contribute to and to control an experimental program within the scope of the assigned projects.

The salary will be commensurate with experience and background—the employee benefit program is liberal.

*Please send complete resume to*
*Mr. L. H. Hitchens.*

# applications development engineer

Celanese CORPORATION OF AMERICA
P. O. Box #1414 Charlotte, North Carolina

*REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.*
*NEW YORK: P. O. Box 12 (36)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*
*LOS ANGELES: 1125 W. 6th St. (17)*

### *POSITIONS VACANT*

**Wanted: Weave Department Overseer for** large pile fabric weave room. Please write letter giving in detail previous experience. Salary open. Address inquiry to P-2092, Textile World.

**Wanted Hosiery Technician Knitter to erect** and operate Kalio full-fashioned machines abroad. Trip expenses paid. Write P-2143, Textile World.

### *SELLING OPPORTUNITY OFFERED*

**Wanted Manufacturer's Agent to represent** old established company selling card clothing and an accepted fabric condenser tape in New England. RW-1243, Textile World.

### *POSITIONS WANTED*

**Textile Engineer—Textile graduate with tex**tile experience in purchasing, mill production and planning, managing mill testing and quality control. Presently employed but seeks position with challenge in purchasing, technical sales and product development, or technical mill supt. Please reply to PW-2089, Textile World.

**Superintendent of Yarn Mill (Would consider** foreign plant) cotton, synthetic and wool blends experience quality, cost and production conscious good personal relations—practical. Married, age forty-six—presently employed. Desires to make change. PW-2153, Textile World.

WANTED
## EXPEDITER FOR KNIT-GOODS CONVERTER

**Thoroughly experienced man with ability to follow-up cloth orders from griege goods through shipment. Should be familiar with dyeing and finishing operations, scheduling, production controls and quality standards. Located Massachusetts. Salary open. Excellent opportunity.**

P-1767, Textile World
330 West 42 St., New York 36, N. Y.

## WOOLEN SUPERINTENDENT

**Required for large progressive woolen and worsted mill located in Province of Quebec, Canada, close to American border. Applicants must be thoroughly experienced in purchasing and blending of wools, picking, carding, spinning and weaving, and should have a knowledge of fabric construction. Excellent working conditions and opportunity for experienced man. Reply in strict confidence giving full particulars including any administrative experience to**

P-2149, Textile World
Class. Adv. Div. P.O. Box 12, N. Y. 36, N.B.

# CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

**UNDISPLAYED RATE:**

$1.50 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS, $1.20 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

**DISPLAYED RATE:**

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

*Send New ADVERTISEMENTS or Inquiries to Classified Adv. Div. of Textile World, P. O. Box 12, N. Y. 36, N. Y. for August issue closing July 13th*

## PLANTS & PROPERTIES

**Put Your Plant in Plant City, Florida.** Be the first to manufacture or wholesale your line in fabulous central Florida. Recent steady growth plus 3,000 new residents each week creating tremendous consumer markets. Plant City, Florida is central for Miami-Jacksonville-Tampa-Orlando. Plant City has two railroads, airport, main highways, cooperative workers. Write for plant sites etc. Plant City Development Committee P. O. Box 1509, Plant City, Florida.

## WANTED

ANYTHING within reason that is wanted in the field served by Textile World, can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

## MFG. FACILITIES AVAILABLE

**Manufacturer in metropolitan NY area has facilities available for small firm who desire to make chemical products for textile, leather and allied industries. All inquiries held in confidence. Address**

CW-2162, Textile World
Class. Adv. Div. P.O. Box 12, N. Y. 36, N. Y.

# MILL
## FOR SALE OR LEASE
### 24 LOOM MILL
**PHILADELPHIA LOCATION**

**82" 4 x 1 W-3 Auto. 500. Live End Mag. Warp Creel. 30 Spindle Schweiter Winder, Foster Coner Model 102. Examining And Mending. Private Loading Dock.**

**BO-2136,** Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

*Your Inquiries to Advertisers Will Have Special Value . . .*

—for you—the advertiser—and the publisher, if you mention this publication. Advertisers value highly this evidence of the publication you read. Satisfied advertisers enable the publishers to secure more advertisers and—more advertisers mean more information on more products or better service—more value—to YOU.

# FOR SALE
## *Located* E. Richard Meinig Company
### READING, PENNSYLVANIA

24—Unirail Headless Package Uptwisters (Universal) 164 spindles each, 8" spindle spacing Model 501—New 1952. Spindles for DuPont Pirns or Bobbins

36,000—Spaulding Fiber Headless Package Take-up Tubes (Tubes have aluminum inserts)

3,000—Stainless Steel Self-stacking Pin Boards for Tubes. Size 12 Tubes each 18" x 24"—5-½" spacing

2,620—Plastic Bobbins for redraw

1,000—Cadmium plated Self-stacking Bobbin Boards. 12 Bobbin capacity, size 12" x 24"—5" centers

100—Steel Skids for Boards. Size 25" x 37-½" x 8-¾" High

4—Doffing Trucks, 7 Portable Steel Stools

1—Lydon Bros. Yarn Conditioner. Model SB 15B, Mach. #2712

1—U. S. Textile Machine Co. High Speed Vertical Spooler of 100 spindles, Serial #WS32—New 1954

### Equipment in Other Locations

150—H & B 40" Cotton Cards

1—Whitin Model P Quiller 189 spindles, 5-¼" gauge, 1925

1—Hermas 58" 4 Blade Vertical Shear, Type AV4595 c/w Sewing & Rolling, Exhauster, Air Filter, etc., 1951

1—Reiner High Speed Warper and 600 end Reiner Magazine Cone Creel—1949 Model

1—Johnson 5 Can Rayon Slasher, S.S. 60" Cylinder, c/w all automatic controls, s.s. Kettle. Unit actually used about one month.

**GEORGE D. FLYNN, JR.**

31 Canal Street — *Phone GAspee 1-9423* — Providence 3, R. I.

# SEARCHLIGHT
# Equipment Spotting Service
### NO CHARGE • NO OBLIGATION

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.)

First, read the dealer ads on the "Searchlight" pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

**Searchlight Equipment Spotting Service**
**c/o Textile World, P.O. Box 12, N. Y. 36, N. Y.**

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

**Searchlight Equipment Spotting Service**
**c/o Textile World, P.O. Box 12, N. Y. 36, N.Y.**

*Please help us locate the following equipment:*

.....

.....

.....

.....

NAME ..... TITLE .....

.....

COMPANY .....

STREET .....

CITY ..... ZONE..... STATE..... 7-56

**AUCTION!**

**WEDNESDAY**
**JULY 25, 1956**
**AT 10:00 A. M.**

# MACHINERY and EQUIPMENT

of the former American Woolen Co.

VASSALBORO MILLS

## NORTH VASSALBORO, MAINE

**(5 miles southeast of Waterville)**

2 D&F 60X60 IN. 3 CYL. ALL IRON WOOLEN CARDS W/PERALTAS AND WHITIN TAPE CONDENSERS — 14 D&F 43X60 IN. 3 CYL. ALL IRON WOOLEN CARDS W/PERALTAS AND WHITIN TAPE CONDENSERS — 7 SCRIBNER S.S. 500 LB. RAW STOCK DYE KETTLES — HUNTER AND OTHER 8 AND 12 FT. TOTALLY ENCLOSED PC. DYE KETTLES — BENOIT BLENDING SYSTEM — GESSNER 72 IN. MDL. FD HI-SPEED PRESS — HUNTER CARBONIZING RANGE w/tank, squeeze rolls and Hurricane 70 in. dryer; 5 Woonsocket and Gessner s.a. and d.a. nappers; 2 D&F 48 in. Fearnaught pickers; 2 P&W Mdl. A shears; GESSNER FULL DECATUR w/Hytor Size L-5 pump, roll up, unrolling stand, controls and motors; GESSNER SEMI-DECATUR; P&S raw stock dryer; Tolhurst hydro-extractor; Sargent 48 in. burr picker; SET 90 IN. SQUEEZE ROLLS; 5 R&L fulling mills; R&L soaper; Gessner 72 and 66 in. cloth steamers; D&F 48x60 in. sgl. cyl. woolen card; Universal No. 90 winder; Kitson 19 in. rag picker; 6 rubber roll cloth washers; 2 Gessner 63½ in. tandem teazle gigs; I-R Type ES-1 hor. air compressor; Toledo dial scales in great variety; traverse grinders; Reeves drives; motors; pumps; chain hoists; PIPE, WELDING, SHEET METAL AND MACHINE SHOPS; office equipment, etc.

*Sale to take place upon the premises and will be sold piece by piece. A deposit of 25% will be required, other terms at sale. Immediate delivery. Inspection daily to time of sale. Illustrated and descriptive catalog upon application.*

Henry S. **ANTHONY** and Co.
**AUCTIONEERS**
219 CENTRAL ST. • LOWELL, MASS. • TEL. GLENVIEW 2-4991

---

**WE OWN OUTRIGHT**
**AND OFFER FOR IMMEDIATE SALE**

100 C&K W-3 LOOMS, 82", MOTOR DRIVEN.
1 SET GESSNER 68" HYD SQUEEZE ROLLS.
3 RIGGS & LOMBARD STAINLESS STEEL PIECE DYE KETTLES.
1 FULL DECATUR NASH #5 PUMP, M. D.
1 JAMES HUNTER 26B HYDRAULIC FULLING MILL, S.S. MOTOR DRIVEN.
1 P&W 3 BLADE CENTURIAL SHEAR, M. D.
10 D&F 2 CYLINDER WORSTED CARDS, 60"x54"
34 INTERSECTING GILL BOXES ALL TYPE.
12 C&K 82" W-3 LOOMS FOR DUCK, PLASTIC, ETC. MOTOR DRIVEN.
1 WHITIN HIGH SPEED DRUM TYPE 94" DRESSING FRAME WITH CREEL & MOTORS, STOP MOTIONS, ETC.
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LOOM MTRS., HARNESS FRAMES, BEAMS, ETC.

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3 OR 4 ROLL TEXTILE CALENDAR 60" OR WIDER ALSO EMBOSSING CALENDAR. SKIVER

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½ Lb. Pkg.—2 Motors

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3' 30' Taper "L" Drive-Gear Box
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Heavy duty chain heads. 30 space battens, pick clocks, motorized.

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600 lb. Capacity
Complete with hoist pumps and motors.

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Complete with hoist pump and motor.

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Complete with controls and motorization.

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16'6" long, 2'6" wide, 18" deep.

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Gear driven. Complete with motorization and auxiliary equipment.

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Belt driven. Complete with motorization and auxiliary equipment.

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**1—SAMPLE DOUBLER TWISTER**
½ lb. pkg, Atwood, 15 spindles, motorized.

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Sample Machine—18 Spindles

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10 spindles individually motorized, complete with controls.

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1947 Model. Motorized.

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Complete with rolling and sewing attachments.

**$600,000 Modern THROWING PLANT**
Sold as individual items

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3 Compartment—4 Pocket

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1—64" Progressive Examining Machine with reverse
1—3-roll 68" Hydraulic Calender
1—8' S.S. Dye Beck
1—14' S.S. Dye Reel, Pony Reel & Rake Beam
1—Butterworth 5-roll Calender, 120", 2 steel rolls, 3 composition rolls, Mycock Expander, Foxwell Guiders, Overhead Swing Folder.
1—Venango 150 lb. S.S. Paddle Dye Machine, totally enclosed.
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1805 AUCTION 1956

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daylight time on the premises

**17 Warner & Swasey Dual and Quad Pin Drafters, Models M2350 and M2380; Holdsworth Dual Intersecting Pin Drafter; Warner & Swasey Pacific Converter, Model M2800; Turbo Orlon Staple Machine, 1955; Turbo Nylon Pre-boarding Machine, 1955; 24 Prince Smith & Stells, Ltd. 200-Spindle Worsted Spinning Frames, 1952; 5 Whitin 24-Spindle Cone Gill Drawing Frames, Model G12W; 13 Prince Smith & Stells, Ltd. 80-Spindle Roving Frames, 9 x 4½, 1952; 3 Prince Smith & Stells, Ltd. 120-Spindle Twister Frames, 1952 and 1953; 6 Prince Smith & Stells, Ltd. 200-Spindle Worsted Twisters, 1952; 2 Foster 60-Spindle Cone Winders, Models 12 and 101; 2 Smith & Furbush Two Iron Cylinder Worsted Cards 54" x 54"; 2 Proctor & Schwartz 60" Motor Driven Automatic Feeds; 2 James Smith 43" Noble Worsted Combs; 13 Lindsey-Hyde 15' Motor Driven Yarn Reels; 7 Prince Smith, Sacco-Lowell Gill Boxes; 3 Balling Machines; 3 Prince Smith Drawing Frames, 4-, 6- and 12-Spindle; 6 Saco-Lowell 36-Spindle Roving Frames; 4 Saco-Lowell 32-Spindle Redoubler Frames; Boyd, Saco-Lowell and Prince Smith Ring and Twister Frames, 24-, 36-, 120- and 200-Spindle; 18 Bahnson Motor Driven Humidifying and Heating Units; Large Quantity Roving Cans, Assorted Sizes; Electric Motors, Etc.**

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1—EXTRACTOR, 30" stainless steel basket.
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18—Model D, 48" Cloth, Roll Top, Electric Stop Motion, motorized
14—Model E, 48" Cloth, Spring Side Motion, Electric Stop Motion, motorized

**AUXILIARY MACHINERY**
3—Hermas Cloth Inspecting Machines—24" x 66" Table
4—Terrell Bobbin Strippers—2-Model L, 2-Model K
2—Johnson Slashers—1-5 Drum, 1-9 Drum Stainless Steel 1950
2—Warpers—1 Cocker, 1 Sipp—and Creels Cotton System
1—Model DH Scott Tester, motorized
4000—Loom Motors, ½, ¾, 1 H.P., 220 & 550V

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1—Belt CONVEYOR 30" wide, 250' long, Motor Drive.
3—Kenyon CHINCHILLA Machines, 63", Carpet Covered Platens.
1—Chenille CUTTING MACHINE, 36", ⅜ and ¾" spacing of Blades.
1—R&L Fleetline YARN CONDITIONING Machine, automatic controls.
1—Gessner 75" SEMI-DECATUR, 36" Cyl., Vac. Pump, motors.
1—P&W SEMI-DECATUR, 1949, Cyl. 72" x 60" dia., Air Guider, Vac. Pump, motors.
3—Reeves V-S DRIVES, Horiz. Type, Size 00 and 2, w/motors.
2—Mt. Hope Cloth DETWISTERS w/Detectors and motors.
1—Tolhurst EXTRACTOR 48", S.S. Basket, 3 Point Suspension.
3—Whitin Broadband FEEDS, Mod. F1, w/ J1 Conveyors—48".
1—Davis & Furber NAPPER GRINDER 96".
1—R&L Fleetline S.S. PIECE DYE KETTLE, totally Enclosed, 12 pc.
6—C&K 92" Auto. 4x1 LOOMS, w/motors and 1-½ Beams.
68—C&K 82" Veribest 4x1 Auto. LOOMS, 25 harness, E.S.M.
23—C&K 32" W2 Auto. LOOMS, 4x1, 20 harness head.
18—C&K 82" W3 Auto. LOOMS, 4x1, 26 Harness head.
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1—D&F 80", 14 Roll, Single Acting NAPPER, Folder, M.D.
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W-3 Change Gears (New)
2M—Marquette, Roll. Bear. Spndl. (New)
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8—C&K W3 All Purpose Looms, 82", 25 harness dobby, motor.
36—C&K W3 Looms, 82", 25 harness dobby, motor.
1—Parks & Woolson Semi-Decater, 72", L4 Pump.
1—Yorkshire 2 Bowl Crab, 72" wide.
1—Miller Pin Tenter Dryer, 70" wide, electric guides.
1—Ingersoll-Rand Air Compressor, Type ERI, 9x6, 10 HP.
1—South Bend Lathe, 36" bed, 10" swing, ½ HP motor.
24—Spdls. Hacoba Automatic Filling Winders—1954.
12—Spdls. Britoba (Mischamp) Filling Winders—1951.
1—H&W Yarn Conditioner, RI, single truck.
1—Voelker 66" High Speed Press, motor driven.
1—Rodney Hunt S.S. Washer & Dye Kettle, 6 string.
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8—Saco-Lowell Tape Drive Twisters, 200 spdls ea., 3" ri, 4" & 5" ga.
2—Riggs & Lombard S.S. Encl. Dye Boxes, 6' wide.
1—Birch open width Washer, 82" wide, 4 squeezers—1946, ind. motors.
1—Riggs & Lombard Rope or Open Washer, 4 compts., 54" pneu. sq.
1—David Gessner Hi-Speed Press, 66" wide, complete—1948.
2—Parks & Woolson Centurial Shears, 66", 3 blades, motor driven.
2—Gessner & Parks & Woolson Semi-Decaters, 72" & 66", 1948-53.

### Other Machinery For Sale

1—Amco Humidifier System, Model #5 & #6 Heads, 1200 heads.
40—Del. Saco-Lowell Controlled Draft Drawing, 4 del.—1949.
2—Saco-Lowell Lap Winders, Model #37—1949.
1—Barber-Colman Hi-Speed Quiller, 30 spdls—1949.
48—C&K C6 Looms, 25 harness, 4x1, box—1946, 60" cloth.
11—Werner Stainless Steel Dye Jiggs, 70" wide—1953.
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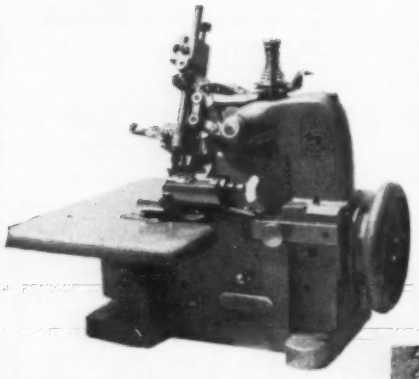

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The ADLER CLASS 83 High-Speed Overlock machine is the answer to efficient, highly productive edge to edge sewing of materials in bleaching and cloth finishing plants. Unlike some machines, the ADLER CLASS 83, after sewing the seam, opens it out like a hinge and the two material edges meet edge to edge in perfect alignment.

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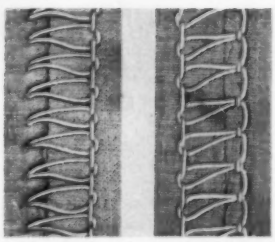

Illustration to right shows the two types of stitches possible for edge to edge sewing.

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We wish to contact dealers who are interested in adding the ADLER CLASS 83 Overlock Machine to their line. Orders already received show evidence of a real market for this machine. Many features must be seen to be fully appreciated. If interested, fill in coupon below and mail to us.

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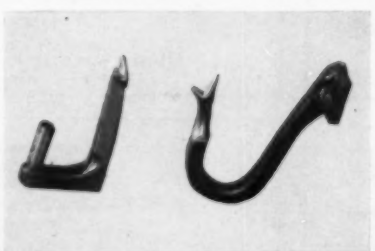

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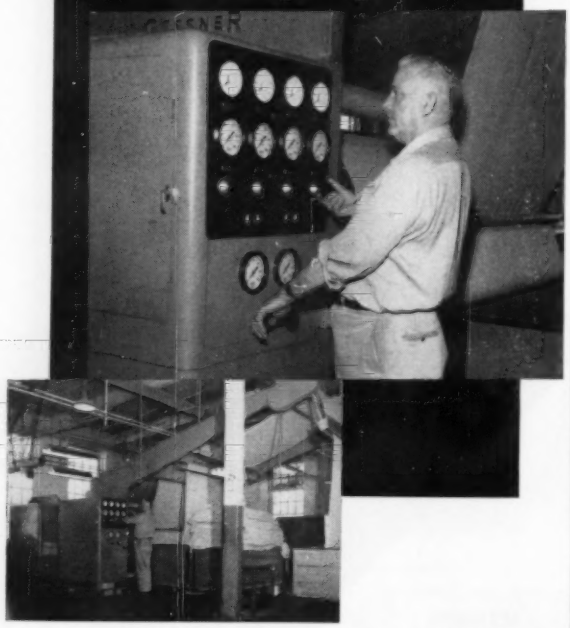



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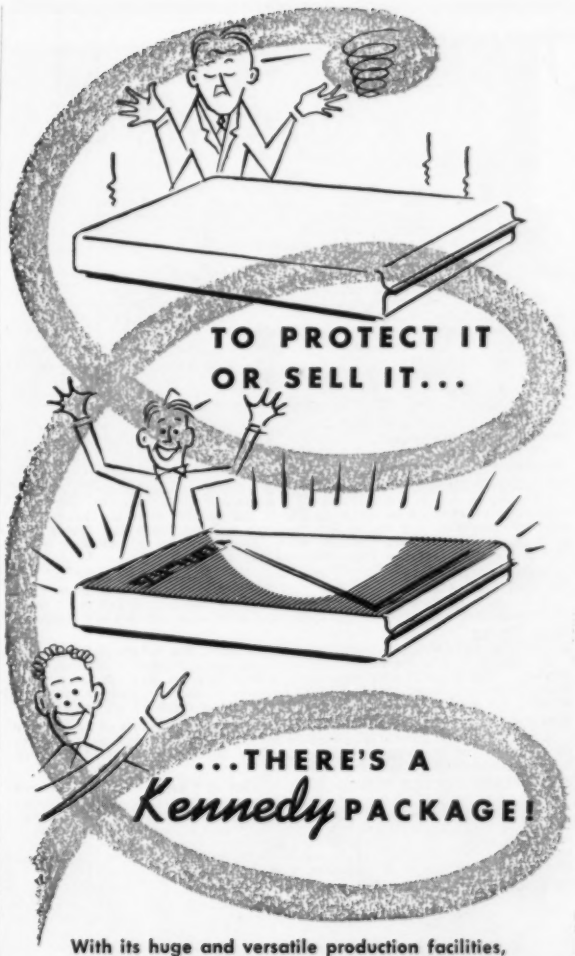


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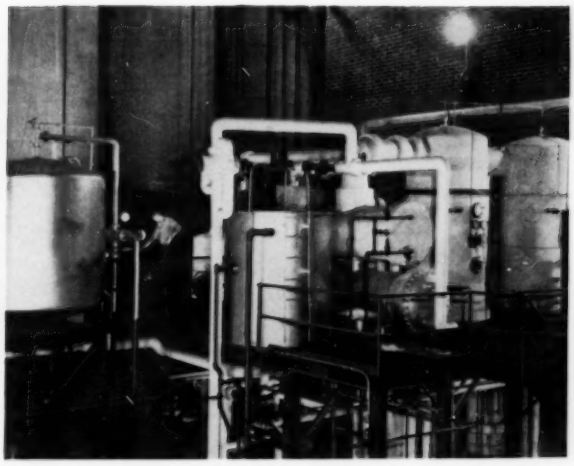

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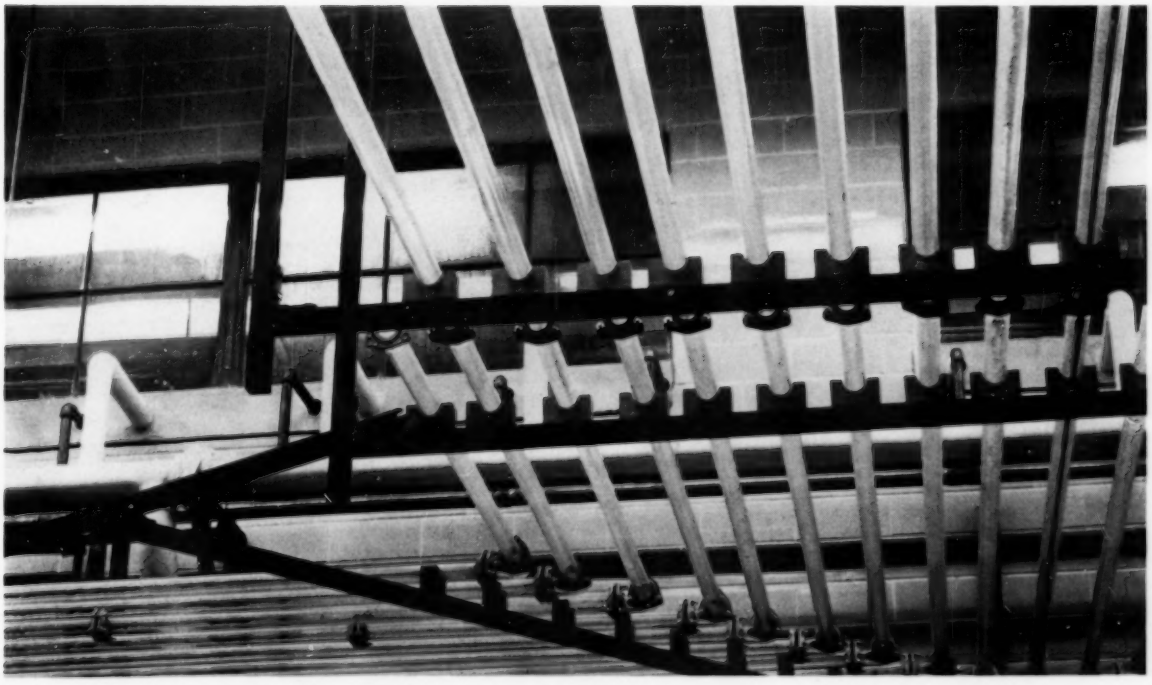

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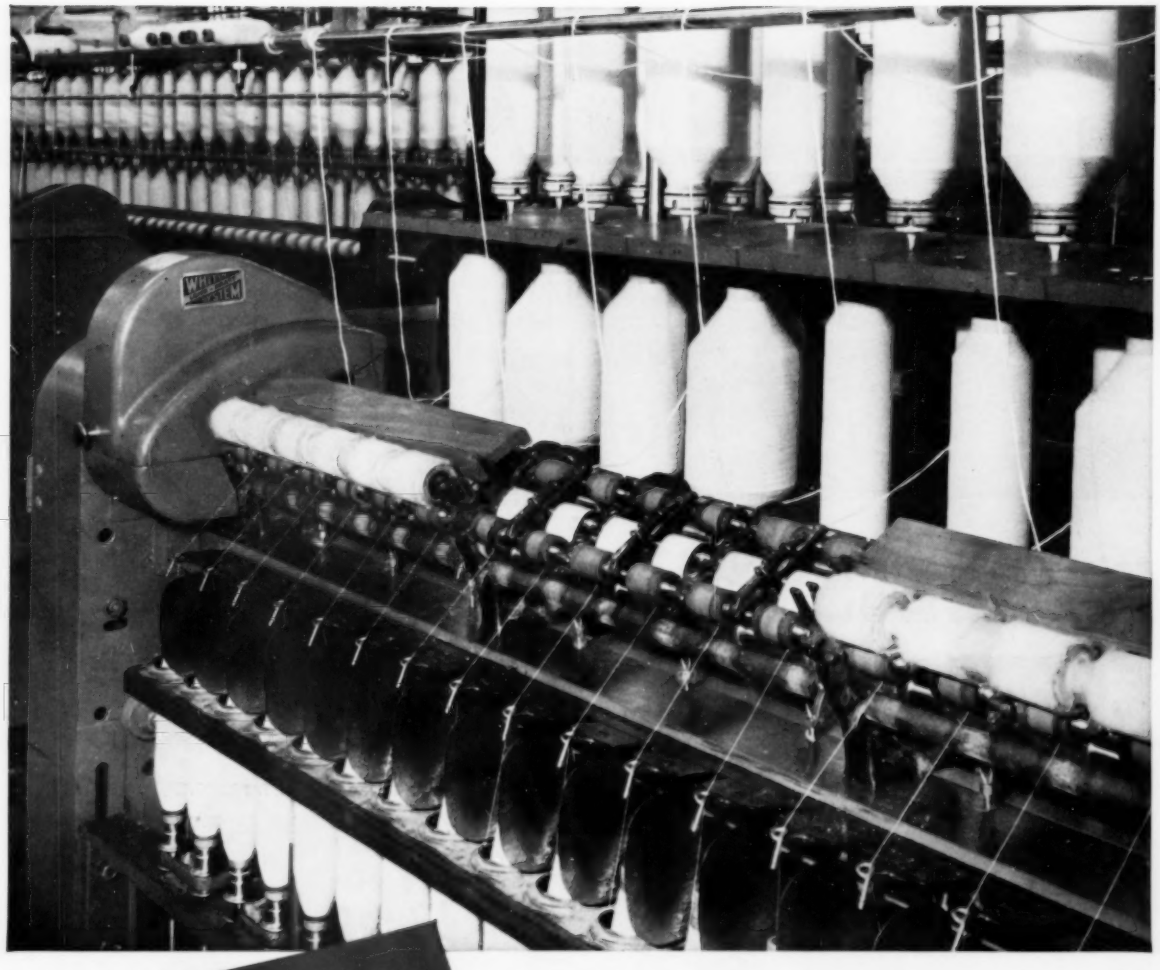

# STAZON — to assure cleaner yarn

**THE IDEAL** top roll lubricant is *Texaco Stazon*—because it *stays on* the bearing surfaces, *off* the yarn. *Texaco Stazon* won't splatter, creep or drip—and that makes it an excellent loom lubricant, too. It assures cleaner yarn and fabric.

*Texaco Stazon* is easy to apply and has a long service life. It does not form gummy deposits and is not affected by humidity. *Texaco Stazon* assures normal operating temperatures, low power consumption and longer bearing life.

For spindle lubrication, use *Texaco Spindura Oil*—approved by manufacturers of all types of spindles. For fiber conditioning, use *Texaco Texspray Compound*—it assures smoother, stronger yarn.

Throughout your mill, Texaco specialized lubricants can help you reduce costs. A Texaco Lubrication Engineer will gladly give you details. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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# TEXACO Lubricants

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